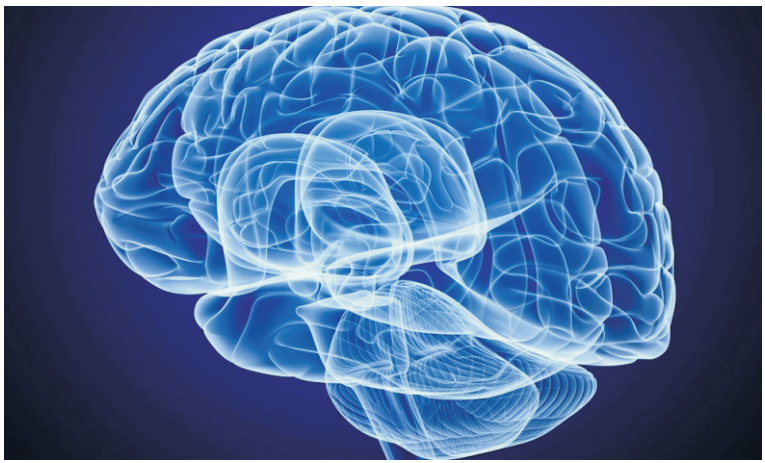
GLOBAL WARMING

Archaea and Viroid Induced Symbiotic Human Evolution – Human Creativity and Autistic Psychopath Syndrome

Ravikumar Kurup
Parameswara Achutha Kurup



Open Science

Global Warming, Archaea and Viroid Induced Symbiotic Human Evolution - Human Creativity and Autistic Psychopath Syndrome

Ravikumar Kurup
Parameswara Achutha Kurup

Open Science

ISBN: 978-1-941926-91-8

Published in 2016 by Open Science Publishers
228 Park Ave., S#45956, New York, NY 10003, U.S.A.
http://www.openscienceonline.com

Contents

Chapter 1

An Actinide Dependent Shadow Biosphere of Archaea and Viroids and Its Messenger Digoxin - Role in Schizophrenia, Autism and Seizure Disorder

Introduction

Global warming induces a genomic change in humans. Global warming induces endosymbiotic archaeal and RNA viroidal growth. The porphyrins form a template for the formation of RNA viroids, DNA viroids, prions, isoprenoids and polysaccharides. They can symbiose together to form primitive archaea. The archaea can further induce HIF alpha, aldose reductose and fructolysis resulting in further porphyrinogenesis and archaeal self replication. The primitive archaeal DNA is integrated along with RNA viroids which are converted to their corresponding DNA by the action of redox stress induced HERV reverse transcriptase into the human genome by the redox stress induced HERV integrase. The archaeal DNA sequences that are integrated into the human genome forms endogenous archaeal human genomic sequences akin to HERV sequences and can function as jumping genes regulating genomic DNA flexibility. The integrated endogenous genomic archaeal sequences can get expressed in the presence of redox stress forming endosymbiotic archaeal particles which can function as a new organelle called the archaeaons. The archaeaon can express the fructolytic pathway constituting an organelle called the fructosome, cholesterol catabolic pathway and digoxin synthetic forming an organelle called the steroidelle, the shikimic acid pathway forming an organelle called the neurotransminoid, antioxidant vitamin E and vitamin C synthetic organelle called the vitaminocyte as well as the glycosaminoglycan synthetic organelle called glycosaminoglycoid. The archaeaon secreting RNA viroids is called the viroidelle.

The endosymbiotic actinidic archaea forms the basis of life and can be considered as the third element in the cell. It regulates the cell, the neuro-immune-endocrine system and the conscious / unconscious brain. The endosymbiotic actinidic archaea can be called as the elixir of life. A definite

population of endosymbiotic actinidic archaea is required for the existence and survival of life. A higher density of endosymbiotic actinidic archaeal population can lead to human disease. Thus actinidic archaea are important for survival of human life and can be considered as crucial to it. Symbiosis by actinidic archaea is the basis of evolution of humans and primates. The increase in endosymbiotic archaeal growth can lead to the induction of homo neanderthalis. This endosymbiotic archaea induced neanderthalisation of the species leads to human disease like metabolic syndrome X, neurodegenerations, schizophrenia and autism, autoimmune disease and cancer. The reduction in endosymbiotic archaeal growth by a high fibre, high medium chain triglyceride and legume protein ketogenic diet, antibiotics from higher plants like Curcuma longa, Emblica officianalis, Allium sativum, Withania somnifera, Moringa pterygosperma and Zingeber officianalis and transplantation of colonic microflora from normal homo sapien population can lead to deneanderthalisation of species and treatment of the above mentioned diseased states. The colonic microflora of neanderthalised diseased states like metabolic syndrome X, neurodegenerations, schizophrenia and autism, autoimmune disease and cancer when transferred to the normal homo sapien species leads to generation and induction of homo neanderthalis. Thus primate and human evolution is symbiotic event which can be induced the modulating symbiotic archaeal growth. Human populations can be divided into matrilineal Neanderthal population in South Indian Dravidians, Celts, Basques, Jews and Berbers and the Cro-Magnon population seen in Africa and Europe. The symbiotic archaeal colonization decides which species - Neanderthal or Cro-Magnon to which the society belongs to. It is tempting to postulate symbiotic microflora and archaea determining the family behavior and traits as well as societal and caste behavior and traits. The cell has been postulated by Margulis to be a symbiotic association of bacteria and viruses. Similarly, the

family, the caste, the community, nationalities and the species itself is determined by archaeal and other bacterial symbiosis.

Symbiosis by microorganisms especially archaea drives the evolution of the species. In such a case symbiosis can be induced by transfer of microflora symbionts and evolution induced. Endosymbiosis by archaea as well as archaeal symbionts in the gut can modulate the genotype, the phenotype, the social class and the racial group of the individual. The symbiotic archaea can have horizontal and vertical transmission. Endosymbiotic archaeal growth leads to neanderthalisation of the species. The neanderthalised species is matrilineal society and includes the Dravidians, the Celts, the Basques and the Berbers. The inhibition of the endosymbiotic archaeal growth leads to evolution of the homo sapiens. This includes the Africans, Aryan invaders of North India and the Aryan derived European population. Symbiosis mediated evolution depends on the gut flora and the diet. This has been demonstrated in the drosophila pseudoobscura. The drosophila mates only with other individuals eating the same diet. When the drosophila gut microflora is altered by feeding antibiotics they mate with other individuals eating different diets. The diet consumed by the drosophila regulates its gut microflora and mating habits. The combination of the human genome and the symbiotic microbial genome is called the hologenome. The hologenome especially its symbiotic microbial component drives human evolution as well as animal evolution. The evolutionary distance between species of wasp depends on the gut microflora. The human gut microflora regulates the endocrine, genetic and neuronal systems. Humans and primate evolution depends on endosymbiotic archaea and gut microflora. The endosymbiotic archaeal growth determines the racial differences between the matrilineal Harappan / Dravidian societies and the patriarchal Aryan society. The matrilineal Harappan / Dravidian society was neanderthalic and had increased endosymbiotic archaeal growth. Endosymbiotic archaeal growth and

neanderthalisation can lead to autoimmune disease, metabolic syndrome X, neurodegeneration, cancer, autism and schizophrenia. The Neanderthal gut flora and endosymbiotic archaea was determined by the non vegetarian ketogenic high fat high protein diet consumed by them in the Eurasian steppes. The homo sapiens including the classical Aryan tribes and African ate a high fibre diet and had lower archaeal growth both endosymbiotic and gut. The dietary fibre intake determines the microbial diversity of the gut. The high fibre intake is associated with increased generation of short chain fatty acids - butyric acid by the gut flora. Butyrate is a HDAC inhibitor and leads to increased generation and incorporation of endogenous retroviral sequences. The high dietary fibre intake related increased HERV sequences leads to increased synaptic connectivity and a dominant frontal cortex as seen in homo sapien species. The neanderthalic species consume a ketogenic non vegetarian high fat high protein low fibre diet. This leads to decreased generation of endogenous HERV sequences and reduced genomic flexibility in neanderthalic species. This produces smaller cerebral cortex and a dominant cerebellar cortex in the neanderthalic brain. The homo neanderthalic species by the low dietary fibre intake starve their microbial self. This leads to increased endosymbiotic and gut archaeal growth. The mucous membrane lining the gut becomes thinned out as the gut bacteria eats up the mucous lining of the gut. This results in leakage of endotoxin and archaea from the gut to the blood breaching the barrier and produces a chronic immunostimulatory inflammatory state which forms the basis of autoimmune disease, metabolic syndrome, neurodegeneration, oncogenic and psychiatric disorders. The Neanderthal species eat a low fibre diet and have a deficiency of microbiota accessed carbohydrate generating short chain fatty acid. There is a deficiency of butyrate generated in the gut from the dietary fibre which can produce suppression of the chronic inflammatory process. The Neanderthals have got the fermentation bye-product deficiency syndrome. The induction of

neanderthalic species depends on the low fibre intake induced high archaeal density endosymbiotic and the gut microflora. The homo sapiens species consume a high fibre diet generating large amounts of short chain fatty acid butyrate which inhibits endosymbiotic and gut archaeal growth. The microbial self of the homo sapien species is more diverse than that of the neanderthalic species and the archaeal population density is less. This results in a protection against chronic inflammation and the induction of diseases like autoimmune disease, metabolic syndrome, neurodegeneration, oncogenic and psychiatric disorders. The homo sapien species have a higher intake of dietary fibre contributing to around 40 g/day and a diverse microbial gut flora with less of archaeal population density. The butyrate generated from dietary fibre produces an immunosuppressive state. Thus the symbiotic microflora with less of archaeal density induces a homo sapien species. This can be demonstrated by experimental induction of evolution. A high fibre high MCT diet as well as antibiotics derived from higher plants and fecal microbiota transfer from sapien species can inhibit the Neanderthal metabolonomics and phenotype and induce the evolution of homo sapiens. A low fibre high fat high protein diet as well as fecal microbiota transfer from the Neanderthal species can produce Neanderthal metabolonomics and phenotype inducing the evolution of homo neanderthalis. Transfer of colonic microflora predominantly archaea and modulation of endosymbiotic archaea by a paleo diet and antibiotics from higher plants can lead to interconversion of human species between homo neanderthalis and homo sapiens. The hologenome especially the microbial flora endosymbiotic/gut drives human and animal evolution and can be experimentally induced. Symbiotic microflora drives evolution. Every animal, every human species, different communities, different races and different caste have their signature endosymbiotic and gut microflora which can be transmitted vertically and horizontally. Thus symbiosis drives human and animal evolution.

Symbiotic microflora drives evolution. Every animal, every human species, different communities, different races and different caste have their signature endosymbiotic and gut microflora which can be transmitted vertically and horizontally. Thus symbiosis drives human and animal evolution. The colonic and endosymbiotic archaea and other microbes like clostridial clusters determine the species, race, caste, community and personal identity of the individual. The identity of the individual - personal, community, caste, race, nationality and species is determined by the colonic and endosymbiotic archaeal and clostridial clusters. Predominent archaeal symbiosis produces homo neanderthalis and less prominent archaeal symbiosis and dominant clostridial clusters in the gut produces the homo sapien species. Each individual, race, nationality, caste, creed and community have the endosymbiotic and colonic microbiota signature. This colonic and endosymbiotic microbiota signature is transferable by the change of endosymbiotic and colonic microbiota from one group to another. Thus the evolution and identity based on individuality, race, nationality, caste and creed can be induced.

This can be interpreted on the basis of Villarreal hypothesis of group identity and cooperativity of RNA collectives. Archaeal symbiosis in the gut and in the tissue spaces determines speciation of human beings as homo sapiens and homo neanderthalis. The endosymbiotic archaea can secrete RNA viroids and viruses and there is a viroid-archaeal host relationship between the two. A dynamic state of virus lysis and persistence can occur in archaea suggesting that viral addiction can occur in archaea. The RNA viroids in the archaea coordinate their behavior by information exchange, modulation and innovation generating new sequence based content. This occurs due to a phenomenon of symbiosis in contrast to the concept of survival of the fittest. The generation of new RNA viroidal sequences is a result of practical competence of living agents to generate new sequences by symbiosis and sharing. This represents highly

productive RNA viroidal quasi-species consortia for the evolution, conservation and plasticity of genomic environments. The behavioural motives of the RNA are single stem loop structures. They have self folding and group building capabilities depending upon functional needs. The evolution process depends upon what Villareal calls RNA stem loop consortia. The whole entity can function only if participatory groups of RNA viroids can get their function coordinated. There is competent denovo generation of new sequences by cooperative action and not by competition. These RNA viroidal group consortia can contribute to the host identity, group identity and group immunity. The term used for this is RNA viroidal sociological behavior. The RNA viroids can build groups that invade the archaea and compete as a group for limited resources such host genomes. A key behavioural motif is able to integrate a persistent life style into the archaeal colony with the addiction module forming competing viroidal groups that are counter balancing each other together with the archaeal/host immune system. This leads to creation of an identity for the archaeal colony and the homo neanderthalis host. Viroids can kill their host and also colonize their host without disease and protect the host from similar viruses and viroids. Together with lysis and protection we see a viroid colonized host that is both symbiotic and innovative acquiring new competent codes. Thus the viroid-host relationship is a pervasive, ancient force in the origin and evolution of life. Cumulative evolution at the level of RNA viroids is like a ratchet effect used for transmission of cultural memes. This learning accumulates so that every new generation must not repeat all innovative thoughts and techniques. Quasi-species of RNA viroids are cooperative and exclusive of other quasi-species. They have group recognition differentiating self-groups and non-self-groups allowing for quasi-species to promote the emergence of group identity. With group identity via counter related addiction modules two opposing components must be present and work coherently and define the

group as a whole. Biological identity is constituted by dynamic interaction of cooperative groups. Virus addiction module is an essential strategy for existence of life in the virosphere. Viruses are transmissible and can persist in specific host population leading to a form of group immunity / identity since identical but uncolonized host population remains susceptible to a killing action of lytic viruses. In this way we see that viruses are necessary providing opposing functions for addiction (persistence/protection and lytic/killing). Viroids can function as consortia, an essential interacting group and provide a mechanism from which consortial function could emerge in the origin of protobiotic life. Genetic parasites can act as a group (qs-c). But for this group to be coherent they must attain group identity and this is typically via an addiction strategy. Antiviral and proviral system in the archaea will themselves emerge in the host from virus derived information. The archaeal viruses themselves provide the critical function required for antiviral defence. The opposing functions are the basis of addiction modules. Thus the emergence of group identity becomes an essential and early event in the emergence of life. This is coherent to the basically group behavior of RNA viroids in archaea. This group selection and group identity are needed to create information coherence and network formation and to establish a system of communication - code competent interactions. This identity serves as information also for the ones that do not share this identity. This is the beginning of self/non-self differentiating capability. In this way viroids promote the emergence of group identity in archaeal colonies and host humans. The archaeal colony identity depends upon the colonizing set of RNA viroids producing a coherent network that is inclusive opposing functions and favours the persistence of parasite derived new information. On the basis of population-based functions of RNA DNA can be considered as a habitat for consortia RNA. Thus RNA viroids of the archaea are involved in complex multicellular identity. This is called as the Gangen

hypothesis by Villarreal. The Gangen describes the emergence of commonly shared code use, group membership and collective living function of RNA viroids. Communication is a code depended interaction and transmission of infectious code defines the origin of the virosphere. This issue refers to the idea of collective of RNA viroids with inherent toxic and antitoxic features should be able to transmit or communicate these agents and their features to a nearby competing population. It strongly favours the survival of RNA viroidal population with compatible addiction modules that will inhibit agent toxicity and allow persistence of new agents. This is thus the survival of the persistently colonized set which is an inherently symbiotic and consortial process. It also promotes increasing complexity and identity/immunity of the host collective via a new agent colonization, and stable addition. Thus the transmission of RNA agents attains both communication and recognition of group membership. In this way the emergence of the virosphere must had been an early event in the origin of life and group identity. Viruses and viroids are genetic parasites and the most abundant living entities on earth. The virosphere is a network of infectious genetic agents. Evolution, conservation and plasticity of genetic identities are the result of cooperative consortia of RNA viroids that are competent to communicate. Thus the archaeal viroidal consortia can symbiotically share and communicate producing new sequences and give an identity to the archaeal colony. The low fibre diet and extreme temperatures of the Eurasian steppes leads to archaeal multiplication and induction of the homo neanderthalis species. The archaeal colony's characteristics are determined by the cooperative consortia of RNA viroids in the archaea and the archaeal colony identity determines the homo neanderthalis identity. Thus the archaeal colonies with their quasi-species consortia of RNA viroids determine the homo neanderthalis identity. The new sequence generation by the RNA viroidal consortia's symbiotic sharing character contributes to the diversity in the

behavior and creativity of the homo neanderthalis population. The archaeal RNA viruses and viroids and the archaeal colonies themselves protect the homo neanderthalis population from retroviral infections. Thus the homo neanderthalis population is retroviral resistant and the quasi-species consortia of archaea and archaeal viroids gives them a group identity as retroviral resistant. Thus the quasi-species consortia of archaea and RNA viroids give homo neanderthalis colonies their identity and idea of self. The homo neanderthalis is resistant to retroviral infection like the Australian aboriginals and the endogenous retroviral sequences in the Neanderthal genome are limited. This leads to lack of plasticity and dynamicity of the human genome and the cerebral cortex in ill-developed with a dominant impulsive cerebellar cortex in the homo neanderthalis population. This produces the impulsive creative surrealistic spiritual neanderthalic brain. As the extreme of temperature goes off and the ice age ends the archaeal population density also comes down. This also can result from the consumption of a high fibre diet in the African continent. The high fibre diet digested by clostridial clusters in the colon promotes butyrate synthesis and butyrate will induce HDAC inhibition and expression of retroviral sequences in the primate genome. This leads to increase in endogenous retroviral sequences in the human genome, increasing genomic dynamicity and the evolution of complicated cerebral cortex dominant brain with its complex synaptic connectivity in the homo sapiens. This leads onto a logical, commonsensical, pragmatic and practical homo sapien brain. The homo sapiens due to lack of archaea and the RNA viroids are susceptible retroviral infection. Thus the archaeal colonies and RNA viroidal quasi-species consortia determine the evolution of the human species and the brain networks. Thus extremes of temperature, fibre intake, archaeal colony density, RNA viroidal quasi-species, group identity and retroviral resistance decides on the evolution of homo sapiens and homo neanderthalis as well as the brain networks. The present

extremes of temperature and low fibre intake in civilized society can lead to increase in archaeal population densities and quasi-species RNA viroidal networks generating a new homo neanderthalis in a new neanderthalic anthropocene age as opposed to the present homo sapien anthropocene age. The archaeal population densities and quasi-species RNA viroidal networks determine homo sapien, homo neanderthalis, racial, caste, community, national, sexual and individual identity.

The roots of Western civilisational disease can be related to the starvation of the colonic microflora. The colonic microflora depends upon complex carbohydrates derived from dietary fibre. The processed food of high protein, fat and sugars is digested and absorbed in the stomach and small intestine. A very little of it reaches the colon and widespread use of antibiotics in medicine has produced mass extinction of the colonic microflora. The colonic microflora is extremely diverse and the diversity is lost. There are 100 trillion bacteria in the colon belonging to 1200 species. They regulate the immune system by inducing the T-regulatory cells. A high fibre diet contributes to colonic microbiota diversity. Interaction with farm animals like cows and dogs also contributes to the colonic microflora diversity. The typical Western diet of high fat, high protein and sugars decreases the colonic microbiota diversity and increase colonic/endosymbiotic archaea producing methanogenesis. The colonic archaea feed upon the mucous lining of the colon and produces leakage of archaea into the blood and tissue system producing endosymbiotic archaea. This results in a chronic inflammatory state. The high fibre diet of Africans, South Americans and Indians produces increased colonic microbiota diversity and increase in clostridial clusters generating SCFA in the gut. High fibre diet is protective against metabolic syndrome and diabetes mellitus. Metabolic syndrome is related to degeneration, cancer, neuropsychiatric illness and autoimmune disease. A high fibre diet of upto 40 g/day can be called as a gut

diet. The colonic microflora especially the clostridial cluster digests the fibre generating short chain fatty acids which regulates immunity and metabolism. High fibre diet increases the colonic mucus secretion and the thickness of the mucus lining. A high fibre diet produces increase in clostridial clusters and mucous secretion. This produces a strong gut blood barrier and prevents metabolic endotoxemia which produces a chronic inflammatory response. High dietary fibre intake and the diversity of the colonic microflora with prominent SCFA producing clostridial clusters are interrelated. The clostridial clusters metabolise the complex carbohydrate in dietary fibre to short chain fatty acids butyrate, propionate and acetate. They increase the T-regulatory function. A high fibre diet increases the bacteroides and reduces the firmecutes of the colonic microflora. A high fibre diet is associated with a low body-mass index. A low fibre diet produces increase in colonic archaeal growth as well as endosymbiotic tissue and blood archaea. This produces more of methanogenesis rather than short chain fatty acid synthesis contributing to immune activation. A low fibre diet is associated a high body-mass index and chronic systemic inflammation. Germ-free mice show cardiac, pulmonary and liver atrophy. Gut microflora is required for the generation of organ systems. The gut microflora is also required for generation of T-regulatory cells. High fibre intake produces more colonic microbiota diversity and increase in clostridial clusters and fermentation by products like butyrate which suppresses inflammation and increases T-regulatory cells. A low fibre diet produces increase in archaeal growth, methanogenesis, destruction of the mucus lining and leakage of the colonic archaea producing endosymbiotic tissue and blood archaea. This produces an immune hyperreactivity contributing to the modern plagues of civilization - metabolic syndrome, schizophrenia, autism, cancer, autoimmunity and degenerations. The gut microbiota drives human evolution. The humans don’t host the gut microbiota but the gut microbiota host us. The human system

forms an elaborate culture laboratory for the propagation and survival of the microbiota. The human system is induced by the microbiota for their survival and growth. The human system exists for the microbiota and not the other way round. The same mechanism holds good in plant systems. Plant started the colonized earth as they started symbiosing with bacteria in the roots systems which can derive nutrients from the soil. Human beings form a mobile culture laboratory for the more effective propagation and survival of the microbiota. The microbiota induces the formation of specialized immune cells called innate lymphoid cells. The innate lymphoid cells will direct the lymphocytes not to attack the beneficial bacteria. Thus the endosymbiotic archaea and the gut archaea induce human, primate and animal evolution to generate structures for them to survive and propagate. The source of endosymbiotic archaea, the third element of life is the colonic archaea that leaks into the tissue spaces and blood systems due to breach in the gut blood barrier. The increase in colonic archaea is due to the starvation of the gut microbiota consequent to a low fibre diet. This results in increase in colonic archaeal growth and destruction of clostridial clusters and bacteroides. The increase colonic archaeal growth in the presence of gut starvation due to low fibre diet eats up the mucus lining and produces breakages in the gut blood barrier. The colonic archaea enters the blood stream and produces endosymbiosis generating endosymbiotic archaea and various new organelle - fructosoids, steroidelle, vitaminocyte, viroidelle, neurotransminoid, porphyrinoids and glycosaminoglycoids.

The increase in endogenous EDLF, a potent inhibitor of membrane Na^+-K^+ ATPase, can decrease this enzyme activity. The results showed increased endogenous EDLF synthesis as evidenced by increased HMG CoA reductase activity, which functions as the rate limiting step of the isoprenoid pathway. Studies in our laboratory have demonstrated that EDLF is synthesized by the isoprenoid pathway. The endosymbiotic archaeal sequences in the human

genome get expressed by redox stress and osmotic stress of global warming. This results in induction of HIF alpha which will upregulate fructolysis and glycolysis. In the setting of redox stress all glucose gets converted to fructose by the induction of enzymes aldose reductase and sorbitol dehydrogenase. Aldose reductase converts glucose to sorbitol and sorbitol dehydrogenase converts sorbitol to fructose. Since fructose is preferentially phosphorylated by ketohexokinases the cell is depleted of ATP and glucose phosphorylation comes to a halt. Fructose becomes the dominant sugar that is metabolized by fructolysis in expressed archaeal particles in the cell functioning as organelle called fructosoids. The fructose is phosphorylated to fructose 1-phosphate which is acted upon by aldolase B which converts it into glyceraldehyde 3-phosphate and dihydroxy acetone phosphate. Glyceraldehyde 3-phosphate is converted to D1,3-biphosphoglycerate which is then converted to 3-phosphoglycerate. The 3-phosphglycerate is converted to 2-phosphoglycerate. 2-phosphoglycerate is converted to phosphoenol pyruvate by the enzyme enolase. Phosphoenol pyruvate is converted to pyruvate by the enzyme pyruvic kinase. The archaeaon induces HIF alpha which upregulates fructolysis and glycolysis but inhibits pyruvate dehydrogenase. The forward metabolism of pyruvate is stopped. The dephosphorylation of phosphoenol pyruvate is inhibited in the setting of pyruvic kinase inhibition. Phosphoenol pyruvate enters the shikimic acid pathway where it is converted to chorismate. The shikimic acid is synthesized by a pathway starting from glyceraldehyde 3-phosphate. Glyceraldehyde 3-phosphate combines with the pentose phosphate pathway metabolite sedoheptulose 7-phosphate which is converted to erythrose 4-phosphate. The pentose phosphate pathway is upregulated in the presence of the suppression of glycolytic pathway. Erythrose 4-phosphate combines with phosphoenol pyruvate to generate shikimic acid. Shikimic acid combines with another molecule of phosphoenol pyruvate to generate chorismate. The

chorismate is converted to prephenic acid and then to parahydroxy phenyl pyruvic acid. Parahydroxy phenyl pyruvic acid is converted to tyrosine and tryptophan as well as neuroactive alkaloids. The shikimic acid pathway is structured in expressed archaeaon organelle called the neurotransminoid. The fructolytic intermediates glyceraldehydes 3-phosphate and pyruvate are the starting points of the DXP pathway of cholesterol synthesis. Glyceraldehyde 3-phosphate combines with pyruvate to form 1-deoxy D-xylulose phosphate (DOXP) which is then converted to 2-C methyl erythritol phosphate. 2-C methyl erythritol phosphate can be synthesized from erythrose 4-phosphate a metabolite of the shikimic acid pathway. DXP combines with MEP to form isopentenyl pyrophosphate which is converted to cholesterol. Cholesterol is catabolised by archaeal cholesterol oxidases to generate digoxin. The digoxin sugars digitoxose and rhamnose are synthesized by the upregulated pentose phosphate pathway. Glycolytic suppression leads to upregulation of the pentose phosphate pathway. The expressed archaeaon organelle concerned with cholesterol catabolism and digoxin synthesis is called the steroidelle. The suppression of glycolysis and stimulation of fructolysis results in upregulation of the hexosamine pathway. Fructose is converted to fructose 6-phosphate by ketohexokinases. The fructose 6-phosphate is converted to glucosamine 6-phosphate by the action of glutamine fructose 6-phosphate amidotransferase (GFAT). Glucosamine 6-phosphate is converted to UDP N-acetyl glucosamine which is then converted to N-acetyl glucosamine and various amino sugars. UDP glucose is converted to UDP D-glucuronic acid. UDP D-glucuronic acid is converted to glucuronic acid. This forms the uronic acid synthetic pathway. Uronic acids and hexosamines form repeating units of glycosaminoglycans. In the setting of glycolytic suppression and fructolytic metabolism fructolysis leads to increase synthesis of hexosamines and GAG synthesis. The GAG synthesizing archaeaon particles are called the glycosaminoglycoids. The

expressed archaeaon particles are capable of synthesizing antioxidant vitamin C and E. The UDP D-glucose is converted to UDP D-glucuronic acid. UDP D-glucuronic acid is converted to D-glucuronic acid. D-glucuronic acid is converted to L-gulonate by enzyme aldoketoreductases. L-gulonate is converted to L-gulonolactone by lactonase. L-gulonolactone is converted to ascorbic acid by the action of archaeal L-gulo oxidase. The vitamin E is synthesized from shikimate which is converted to tyrosine and then to parahydroxy phenyl pyruvic acid. Parahydroxy phenyl pyruvic acid is converted to homogentisate. Homogentisate is converted to 2-methyl 6-phytyl benzoquinone which is converted to alpha tocopherol. 2-methyl 6-phytyl benzoquinone is converted to 2,3-methyl 6-phytyl benzoquinone and gamma tocopherol. Vitamin E can also be synthesized by the DXP pathway. Glyceraldehyde 3-phosphate and pyruvate combined to form 1-deoxy D-xylulose 5-phosphate which is converted to 3-isopentenyl pyrophosphate. 3-isopentenyl pyrophosphate and dimethyl allyl pyrophosphate combined to form 2-methyl 6-phytyl benzoquinone which is converted to tocopherols. The ubiquinone another important membrane antioxidant and part of the mitochondrial electron transport chain is synthesized by the shikimic acid pathway and DXP pathway. The isoprenoid moiety of ubiquinone is contributed from the DXP pathway and the rest of it by tyrosine catabolism. The tyrosine is generated by the shikimic acid pathway. The archaeaon particles concerned with the synthesis of vitamin C, vitamin E and ubiquinone which are all antioxidants are called the vitaminocyte.

The human brain synthesizes an endogenous membrane sodium-potassium ATPase inhibitor digoxin which plays a role in neuro-immuno-endocrine integration and pathogenesis of several neuropsychiatric diseases. Endomyocardial fibrosis (EMF) along with the root wilt disease of coconut is endemic to Kerala with its radioactive actinide beach sands. Actinides like cerium producing intracellular magnesium deficiency due to cerium-magnesium

exchange sites in the cell membrane have been implicated in the etiology of EMF.[1] Endogenous digoxin, a steroidal glycoside has also been related to the etiology of EMF due to the intracellular magnesium deficiency it produces.[2] Organisms like phytoplasmas and viroids have also been demonstrated to play a role in the etiology of these diseases.[3, 4] Endogenous digoxin has also been related to the pathogenesis of schizophrenia, autism and primary seizure disorder.[2] The possibility of endogenous digoxin synthesis by actinide based primitive organism like archaea with a mevalonate pathway and cholesterol catabolism was considered.[5-7] Davies has put forward the concept of a shadow biosphere of organisms with alternate biochemistry present in earth itself.[8] An actinide dependent shadow biosphere of archaea and viroids in the above mentioned disease states is described[6].

Methods

Informed consent of the subjects and the approval of the ethics committee of the institute were obtained for the study. The following groups were included in the study: - schizophrenia, autism and primary seizure disorder/primary generalized epilepsy. There were 10 patients in each group and each patient had an age and sex matched healthy control selected randomly from the general population. The blood samples were drawn in the fasting state before treatment was initiated. Plasma from fasting heparinised blood was used and the experimental protocol was as follows (I) Plasma+phosphate buffered saline, (II) same as I+cholesterol substrate, (III) same as II+cerium 0.1 mg/ml, (IV) same as II+ciprofloxacine and doxycycline each in a concentration of 1 mg/ml. Cholesterol substrate was prepared as described by Richmond.[9] Aliquots were withdrawn at zero time immediately after mixing and after incubation at 37 ℃ for 1 hour. The following estimations were carried out: - Cytochrome F420, free RNA, free DNA, muramic acid, polycyclic aromatic

hydrocarbon, hydrogen peroxide, dopamine, pyruvate, ammonia, glutamate, cytochrome C, hexokinase, ATP synthase, HMG CoA redutase, digoxin and bile acids.[10-13] Cytochrome F420 was estimated flourimetrically (excitation wavelength 420 nm and emission wavelength 520 nm). Polycyclic aromatic hydrocarbon was estimated by measuring hydrogen peroxide liberated by using glucose reagent. The statistical analysis was done by ANOVA.

Results

The parameters checked as indicated above were: - cytochrome F420, free RNA, free DNA, muramic acid, polycyclic aromatic hydrocarbon, hydrogen peroxide, serotonin, pyruvate, ammonia, glutamate, cytochrome C, hexokinase, ATP synthase, HMG CoA reductase, digoxin and bile acids. Plasma of control subjects showed increased levels of the above mentioned parameters with after incubation for 1 hour and addition of cholesterol substrate resulted in still further significant increase in these parameters. The plasma of patients showed similar results but the extent of increase was more. The addition of antibiotics to the control plasma caused a decrease in all the parameters while addition of cerium increased their levels. The addition of antibiotics to the patient's plasma caused a decrease in all the parameters while addition of cerium increased their levels but the extent of change was more in patient's sera as compared to controls. The results are expressed in tables 1-7 as percentage change in the parameters after 1 hour incubation as compared to the values at zero time.

Table 1. *Effect of cerium and antibiotics on muramic acid and dopamine.*

Group	DOPAMINE % (Increase with Cerium)		DOPAMINE % (Decrease with Doxy)		Muramic acid % change (Increase with Cerium)		Muramic acid % change (Decrease with Doxy+Cipro)	
	Mean	±SD	Mean	± SD	Mean	± SD	Mean	± SD
Normal	4.41	0.15	18.63	0.12	4.34	0.15	18.24	0.37
Schizo	21.88	1.19	66.28	3.60	23.02	1.65	67.61	2.77
Seizure	22.29	1.33	65.38	3.62	22.13	2.14	66.26	3.93
Autism	22.76	2.20	67.63	3.52	22.79	2.20	64.26	6.02
F value	403.394		680.284		348.867		364.999	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 2. *Effect of cerium and antibiotics on free DNA and RNA.*

Group	DNA % change (Increase with Cerium)		DNA % change (Decrease with Doxy)		RNA % change (Increase with Cerium)		RNA % change (Decrease with Doxy)	
	Mean	± SD	Mean	± SD	Mean	± SD	Mean	± SD
Normal	4.37	0.15	18.39	0.38	4.37	0.13	18.38	0.48
Schizo	23.28	1.70	61.41	3.36	23.59	1.83	65.69	3.94
Seizure	23.40	1.51	63.68	4.66	23.08	1.87	65.09	3.48
Autism	22.12	2.44	63.69	5.14	23.33	1.35	66.83	3.27
F value	337.577		356.621		427.828		654.453	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 3. *Effect of cerium and antibiotics on HMG CoA reductase and PAH.*

Group	HMG CoA R % change(Increase with Cerium)		HMG CoA R % change (Decrease with Doxy)		PAH % change (Increase with Cerium)		PAH % change (Decrease with Doxy)	
	Mean	± SD	Mean	± SD	Mean	± SD	Mean	± SD
Normal	4.30	0.20	18.35	0.35	4.45	0.14	18.25	0.72
Schizo	22.91	1.92	61.63	6.79	23.01	1.69	59.49	4.30
Seizure	23.09	1.69	61.62	8.69	22.67	2.29	57.69	5.29
Autism	22.72	1.89	64.51	5.73	22.61	1.42	64.48	6.90
F value	319.332		199.553		391.318		257.996	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 4. *Effect of cerium and antibiotics on digoxin and bile acids.*

Group	Digoxin (ng/ml) (Increase with Cerium)		Digoxin (ng/ml) (Decrease with Doxy+Cipro)		Bile acids % change (Increase with Cerium)		Bile acids % change (Decrease with Doxy)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	0.11	0.00	0.054	0.003	4.29	0.18	18.15	0.58
Schizo	0.55	0.06	0.219	0.043	23.20	1.87	57.04	4.27
Seizure	0.51	0.05	0.199	0.027	22.61	2.22	66.62	4.99
Autism	0.53	0.08	0.205	0.041	22.21	2.04	63.84	6.16
F value	135.116		71.706		290.441		203.651	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 5. *Effect of cerium and antibiotics on pyruvate and hexokinase*.

Group	Pyruvate % change (Increase with Cerium)		Pyruvate % change (Decrease with Doxy)		Hexokinase % change (Increase with Cerium)		Hexokinase % change (Decrease with Doxy)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	4.34	0.21	18.43	0.82	4.21	0.16	18.56	0.76
Schizo	20.99	1.46	61.23	9.73	23.01	2.61	65.87	5.27
Seizure	20.94	1.54	62.76	8.52	23.33	1.79	62.50	5.56
Autism	21.91	1.71	58.45	6.66	22.88	1.87	65.45	5.08
F value	321.255		115.242		292.065		317.966	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 6. *Effect of cerium and antibiotics on hydrogen peroxide and delta amino levulinic acid.*

Group	H_2O_2 % (Increase with Cerium)		H_2O_2 % (Decrease with Doxy)		ALA % (Increase with Cerium)		ALA % (Decrease with Doxy)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	4.43	0.19	18.13	0.63	4.40	0.10	18.48	0.39
Schizo	22.50	1.66	60.21	7.42	22.52	1.90	66.39	4.20
Seizure	23.81	1.19	61.08	7.38	22.83	1.90	67.23	3.45
Autism	23.52	1.49	63.24	7.36	23.20	1.57	66.65	4.26
F value	380.721		171.228		372.716		556.411	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 7. *Effect of cerium and antibiotics on ATP synthase and cytochrome F420.*

Group	ATP synthase % (Increase with Cerium)		ATP synthase % (Decrease with Doxy)		CYT F420 % (Increase with Cerium)		CYT F420 % (Decrease with Doxy)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	4.40	0.11	18.78	0.11	4.48	0.15	18.24	0.66
Schizo	23.67	1.42	67.39	3.13	23.24	2.01	58.72	7.08
Seizure	23.09	1.90	66.15	4.09	23.46	1.87	59.27	8.86
Autism	22.60	1.64	66.86	4.21	21.68	1.90	57.93	9.64
F value	449.503		673.081		306.749		130.054	
P value	< 0.001		< 0.001		< 0.001		< 0.001	

Table 8

	Serum fructose		Serum fructokinase		Aldolase B		Total GAG	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	2.50	0.195	8.50	0.405	3.50	1.304	3.50	0.707
Schizo	31.14	4.446	22.19	2.634	11.63	3.081	21.50	1.714
Autism	28.66	5.089	24.09	2.146	12.30	1.621	22.60	3.054
Bipolar	29.88	5.150	22.29	1.641	10.87	1.895	23.47	2.878
F value	17.373		13.973		13.903		21.081	
p value	< 0.01		< 0.01		< 0.01		< 0.01	

Table 9

	Total TG		Serum ATP levels		Uric acid		Anti-aldolase	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	124.00	3.688	2.50	0.405	5.70	0.369	7.50	1.704
Schizo	244.00	31.383	0.72	0.102	8.65	0.701	1.35	0.319
Autism	284.30	19.743	0.87	0.072	8.14	0.538	1.35	0.218
Bipolar	289.89	23.406	0.74	0.115	9.59	0.783	1.80	0.402
F value	16.378		59.169		14.166		55.173	
p value	< 0.01		< 0.01		< 0.01		< 0.01	

Table 10

	Anti-enolase		Anti-pyruvatekinase		Anti-GAPDH	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	1.50	0.358	50.40	5.960	5.20	0.363
Schizo	0.40	0.142	22.02	11.954	1.31	0.235
Autism	0.20	0.060	19.27	2.201	1.20	0.205
Bipolar	0.39	0.124	18.93	6.447	1.78	0.355
F value	14.091		21.073		58.769	
p value	< 0.01		< 0.01		< 0.01	

Discussion

Archaeal Cholesterol Catabolism in Relation to Psychiatric Disease

The archaeaon steroidelle DXP pathway and the upregulated pentose phosphate pathway contribute to digoxin synthesis. There was increase in cytochrome F420 indicating archaeal growth. The archaea can synthesize and use cholesterol as a carbon and energy source.[14, 15] The archaeal origin of the enzyme activities was indicated by antibiotic induced suppression. The study indicates the presence of actinide based archaea with an alternate actinide based enzymes or metalloenzymes in the system as indicated by cerium induced increase in enzyme activities.[16] There was also an increase in archaeal HMG CoA reductase activity indicating increased cholesterol synthesis by the archaeal mevalonate pathway. The archaeal beta hydroxyl steroid dehydrogenase activity indicating digoxin synthesis and archaeal cholesterol hydroxylase activity indicating bile acid synthesis were increased.[7] The archaeal cholesterol oxidase activity was increased resulting in generation of pyruvate and hydrogen peroxide.[15] The pyruvate gets converted to glutamate and ammonia by the GABA shunt pathway. The archaeal aromatization of cholesterol generating PAH, serotonin and dopamine was also detected.[17] The archaeal glycolytic hexokinase activity and archaeal extracellular ATP synthase

activity were increased. The archaea can undergo magnetite and calcium carbonate mineralization and can exist as calcified nanoforms.[18]

Archaeal-Viroidal Human Genomic Sequences and Psychiatric Disease

There was an increase in free RNA indicating self replicating RNA viroids and free DNA indicating generation of viroid complementary DNA strands by archaeal reverse transcriptase activity. The actinides modulate RNA folding and catalyse its ribozymal action. Digoxin can cut and paste the viroidal strands by modulating RNA splicing generating RNA viroidal diversity. The viroids are evolutionarily escaped archaeal group I introns which have retrotransposition and self splicing qualities.[19] Archaeal pyruvate can produce histone deacetylase inhibition resulting in endogenous retroviral (HERV) reverse transcriptase and integrase expression. This can integrate the RNA viroidal complementary DNA into the noncoding region of eukaryotic noncoding DNA using HERV integrase as has been described for borna and ebola viruses.[20] The noncoding DNA is lengthened by integrating RNA viroidal complementary DNA with the integration going on as a continuing event. The archaea genome can also get integrated into human genome using integrase as has been described for trypanosomes.[21] The integrated viroids and archaea can undergo vertical transmission and can exist as genomic parasites.[20, 21] This increases the length and alters the grammar of the noncoding region producing memes or memory of acquired characters.[22] The viroidal complementary DNA can function as jumping genes producing a dynamic genome important in storage of synaptic information, HLA gene expression and neurodevelopmental gene expression. The alteration in DNA sequences produced by viroidal complementary DNA jumping genes can lead onto schizophrenia and primary seizure disorder. The RNA viroids can regulate mRNA function by RNA interference.[19] The phenomena of RNA interference can modulate T-cell and B-cell function,

neuronal transmission and euchromatin / heterochromatin expression. The RNA viroid induced mRNA interference can modulate dopaminergic, glutamatergic and serotoninergic synaptic transmission contributing to the pathogenesis of schizophrenia and primary seizure disorder.

The presence of muramic acid, HMG CoA reductase and cholesterol oxidase activity inhibited by antibiotics indicates the presence of bacteria with mevalonate pathway. The bacterial with mevalonate pathway include streptococcus, staphylococcus, actinomycetes, listeria, coxiella and borrelia.[23] The bacteria and archaea with mevalonate pathway and cholesterol catabolism had a evolutionarily advantage and constitutes the isoprenoidal clade organism with the archaea evolving into mevalonate pathway gram positive and gram negative organism through horizontal gene transfer of viroidal and virus genes.[24] The isoprenoidal clade prokaryotes develop into other groups of prokaryotes via viroidal / virus as well as eukaryotic horizontal gene transfer producing bacterial speciation.[25] The RNA viroids and its complementary DNA developed into cholesterol enveloped RNA and DNA viruses like herpes, retrovirus, influenza virus, borna virus, cytomegalo virus and ebstein barr virus by recombining with eukaryotic and human genes resulting in viral speciation. Bacterial and viral species are ill defined and fuzzy with all of them forming one common genetic pool with frequent horizontal gene transfer and recombination. Thus the multi and unicellular eukaryote with its genes serves the purpose of prokaryotic and viral speciation. The multicellular eukaryote developed so that their endosymbiotic archaeal colonies could survive and forage better. The multicellular eukaryotes are like bacterial biofilms. The archaea and bacteria with a mevalonate pathway uses the extracellular RNA viroids and DNA viroids for quorum sensing and in the generation of symbiotic biofilm like structures which develop into multicellular eukaryotes.[26, 27] The endosymbiotic archaea and bacteria with mevalonate pathway still uses the

RNA viroids and DNA viroids for the regulation of multicellular eukaryote. Pollution is induced by the primitive nanoarchaea and mevalonate pathway bacteria synthesized PAH and methane leading on to redox stress. Redox stress leads to sodium potassium ATPase inhibition, inward movement of plasma membrane cholesterol, defective SREBP sensing, increased cholesterol synthesis and nanoarchaeal/mevalonate pathway bacterial growth.[28] Redox stress leads on to viroidal and archaeal multiplication. Redox stress can also lead to HERV reverse transcriptase and integrase expression. The noncoding DNA is formed of integrating RNA viroidal complementary DNA and archaea with the integration going on as a continuing event. The archaeal pox like dsDNA virus forms evolutionarily the nucleus. The integrated viroidal, archaeal and mevalonate pathway bacterial sequences can undergo vertical transmission and can exist as genomic parasites. The genomic integrated archaea, mevalonate pathway bacteria and viroids form a genomic reserve of bacteria and viruses which can recombine with human and eukaryotic genes producing bacterial and viral speciation. Bacteria and viruses have been related to the pathogenesis of schizophrenia and primary seizure disorder. Borrelia, toxoplasma, chlamydia, mycoplasma, retroviruses, herpes virus, influenza virus and borna virus contribute to the neuropathogenesis of schizophrenia.[29-31] Herpes virus is implicated in the pathogenesis of primary seizure disorder. The change in the length and grammar of the noncoding region produces eukaryotic speciation and individuality.[32] Changes in the length of noncoding region can lead onto disorders of consciousness like schizophrenia and autism.[33] The human endogenous retroviruses and change in the length and grammar of the noncoding region has been described in schizophrenia. The integration of nanoarchaea, mevalonate pathway prokaryotes and viroids in to the eukaryotic and human genome produces a chimera which can multiply producing biofilm like multicellular structures having a mixed archaeal, viroidal, prokaryotic and

eukaryotic characters which is a regression from the multicellular eukaryotic tissue. This results in a new neuronal, metabolic, immune and tissue phenotype leading to human diseases like schizophrenia and primary seizure disorder. The microchimeras formed can lead to polyploidy. Neuronal polyploidy and microchimeras have been described in schizophrenia.

Archaeal Digoxin and Disorders of Consciousness

The archaea and viroids can regulate the nervous system including the NMDA / GABA thalamo-cortico-thalamic pathway mediating conscious perception.[2, 34] NMDA / GABA receptors can be modulated by digoxin induced calcium oscillations resulting in NMDA / glutamic acid decarboxylase (GAD) activity induction, PAH increasing NMDA activity and inducing GAD as well as viroid induced RNA interference modulating NMDA / GABA receptors.[2] The cholesterol ring oxidase generated pyruvate can be converted by the GABA shunt pathway to glutamate and GABA. Increased NMDA transmission has been described in schizophrenia and primary seizure disorder. The dipolar PAH and archaeal magnetite in the setting of digoxin induced sodium potassium ATPase inhibition can produce a pumped phonon system mediated Frohlich model superconducting state inducing quantal perception with nanoarchaeal sensed gravity producing the orchestrated reduction of the quantal possibilities to the macroscopic world.[2, 34] Schizophrenia and autism are described as disorders of consciousness and increased integration of archaea and viroids into the genome can contribute to its neuropathogenesis.

Archaeal and Viroidal Sequences in Human Genome, Hemispheric Dominance and Consciousness

The archaea can regulate limbic lobe transmission with archaeal cholesterol aromatase / ring oxidase generated norepinephrine, dopamine, serotonin and acetyl choline.[17] Increased dopaminergic and serotoninergic transmission is

important in the pathogenesis of schizophrenia and autism. The higher degree of integration of the archaea into the genome produces increased digoxin synthesis producing right hemispheric dominance and lesser degree producing left hemispheric dominance.[2] Right hemispheric dominance has been described in schizophrenia, autism and primary seizure disorder. The increased integration of archaea into the neuronal genome can produce increased cholesterol oxidase and aromatase mediated monoamine and NMDA transmission producing schizophrenia, autism and primary seizure disorder. The archaeal bile acids are chemically diverse and structurally different from human bile acids. The archaeal bile acids can bind olfactory GPCR receptors and stimulate the limbic lobe producing a sense of social identity. The dominance of archaeal bile acids over human bile acids in stimulating the olfactory GPCR - limbic lobe pathway leads to loss of social identity resulting in autism and schizophrenia.[35] Archaea and RNA viroid can bind the TLR receptor induce NFKB producing immune activation and cytokine TNF alpha secretion. The archaeal DXP and mevalonate pathway metabolites can bind γδ TCR and digoxin induced calcium signaling can activate NFKB producing chronic immune activation.[2, 36] The archaea and viroid induced chronic immune activation and generation of superantigens can lead on to autoimmune disease. Immune activation and autoimmunity is important in the pathogenesis of schizophrenia, autism and primary seizure disorder. Autoantibodies have been described in schizophrenia, autism and primary seizure disorder. Archaea, viroids and digoxin can induce the host AKT PI3K, AMPK, HIF alpha and NFKB producing the Warburg metabolic phenotype.[37] The increased glycolytic hexokinase activity, decrease in blood ATP, leakage of cytochrome C, increase in serum pyruvate and decrease in acetyl CoA indicates the generation of the Warburg phenotype. There is induction of glycolysis, inhibition of PDH activity and mitochondrial dysfunction resulting in inefficient energetics. Mitochondrial dysfunction can

lead onto NMDA excitotoxicity and cell death important in schizophrenia, autism and primary seizure disorder. Cholesterol oxidase activity, increased glycolysis related NADPH oxidase activity and mitochondrial dysfunction generates free radicals important in the pathogenesis of schizophrenia, autism and primary seizure disorder. The accumulated pyruvate enters the GABA shunt pathway and is converted to citrate which is acted upon by citrate lyase and converted to acetyl CoA, used for cholesterol synthesis.[37] The pyruvate can be converted to glutamate and ammonia which is oxidised by archaea for energy needs. The increased cholesterol substrate leads to increased archaeal growth and digoxin synthesis leading to metabolic channeling to the mevalonate pathway. Hyperdigoxinemia is important in the pathogenesis of schizophrenia, autism and primary seizure disorder.[2] The Warburg phenotype can contribute to the pathogenesis of schizophrenia and autism by augmenting the bacterial shikimic acid pathway. The upregulated glycolysis consequent to the Warburg phenotype produces phosphoenolpyruvate, a basic substrate for the bacterial shikimic acid pathway which can synthesise monoamines and neuroactive alkaloids. The shikimic acid pathway can generate dopamine and serotonin producing the increased monoaminergic transmission in schizophrenia and autism. The shikimic acid pathway can also synthesise the neuroactive alkaloids strychnine, nicotine, morphine, mescaline and LSD important in the pathogenesis of schizophrenia and autism. Endogenous neuroactive alkaloids have been described in schizophrenia, autism and primary seizure disorder by several workers.[2] The upregulated glycolysis can also contribute to increased NMDA and GABA transmission in the thalamo-cortico-thalamic pathway. The glycolytic pathway produces phosphoglycerate which is converted to phosphoserine and then serine which activates the NMDA receptor. The glycolytic enzyme glyceraldehyde 3-phosphate dehydrogenase is a GABA receptor kinase and activates GABA transmission. Thus the archaea and viroid

induced Warburg phenotype can contribute to the pathogenesis of schizophrenia, autism and primary seizure disorder. The archaeal cholesterol catabolism can deplete the cell membranes of cholesterol resulting in alteration in lipid microdomains and their related neurotransmitter receptor contributing to the altered NMDA, serotoninergic and dopaminergic transmission in schizophrenia, autism and primary seizure disorder.

Archaeal and Viroidal Sequences in Human Genome - A New Neuronal Phenotype

In schizophrenia, autism and primary seizure disorder the paper presents data on: (1) Detection of a shadow biosphere of archaea, viroid and mevalonate pathway bacteria, (2) Bacterial cholesterol synthesis and catabolism are important in pathogenesis, (3) The integration of viroids and archaea into the neuronal genome creates a new phenotype.

References

[1] Valiathan MS, Somers K, Kartha CC. *Endomyocardial fibrosis*. Delhi: Oxford University Press; 1993.

[2] Kurup R, Kurup PA. *Hypothalamic digoxin, cerebral dominance and brain function in health and diseases*. New York: Nova Science Publishers; 2009.

[3] Hanold D, Randies JW. Coconut cadang-cadang disease and its viroid agent. *Plant Disease*, 1991; 75(1): 330-335.

[4] Edwin BT, Mohankumaran C. Kerala wilt disease phytoplasma: Phylogenetic analysis and identification of a vector, *Proutista moesta*. *Phys Mol Plant Path.*, 2007; 71(1-3): 41-47.

[5] Eckburg PB, Lepp PW, Relman DA. Archaea and their potential role in human disease. *Infect Immun.*, 2003; 71: 591-596.

[6] Adam Z. Actinides and Life's Origins. *Astrobiology*, 2007; 7: 6.

[7] Schoner W. Endogenous cardiac glycosides, a new class of steroid hormones. *Eur J Biochem.*, 2004; 269: 2440-2448.

[8] Davies PCW, Benner SA, Cleland CE, Lineweaver CH, McKay CP, Wolfe-Simon F. Signatures of a Shadow Biosphere. *Astrobiology*, 2009; 1: 241-249.

[9] Richmond W. Preparation and properties of a cholesterol oxidase from nocardia species and its application to the enzymatic assay of total cholesterol in serum. *Clin Chem.*, 1973; 19(2): 1350-1356.

[10] Snell ED, Snell CT. *Colorimetric Methods of Analysis*, Vol. 3A. New York: Van Nostrand; 1961.

[11] Glick D. *Methods of Biochemical Analysis*, Vol. 5. New York: Interscience Publishers; 1971.

[12] Colowick, Kaplan NO. *Methods in Enzymology*, Vol. 2. New York: Academic Press; 1955.

[13] Maarten AH, Marie-Jose M, Cornelia G, van Helden-Meewsen, Fritz E, Marten PH. Detection of muramic acid in human spleen. *Infect Immun*., 1995; 63(5): 1652-1657.

[14] Smit A, Mushegian A. Biosynthesis of isoprenoids via mevalonate in Archaea: the lost pathway. *Genome Res*., 2000; 10(10): 1468-84.

[15] Van der Geize R, Yam K, Heuser T. A gene cluster encoding cholesterol catabolism in a soil actinomycete provides insight into Mycobacterium tuberculosis survival in macrophages. *Proc Natl Acad Sci USA*, 2007; 104(6): 1947-52.

[16] Francis AJ. Biotransformation of uranium and other actinides in radioactive wastes. *J Alloys Comp*., 1998; 271-273: 78-84.

[17] Probian C, Wülfing A, Harder J. Anaerobic mineralization of quaternary carbon atoms: Isolation of denitrifying bacteria on pivalic acid (2,2-Dimethylpropionic acid). *Appl Environ Microbiol.*, 2003; 69(3): 1866-1870.

[18] Vainshtein M, Suzina N, Kudryashova E, Ariskina E. New Magnet-Sensitive Structures in Bacterial and Archaeal Cells. *Biol Cell.* 2002; 94(1): 29-35.

[19] Tsagris EM, de Alba AE, Gozmanova M, Kalantidis K. Viroids. *Cell Microbiol*., 2008; 10: 2168.

[20] Horie M, Honda T, Suzuki Y. Endogenous non-retroviral RNA virus elements in mammalian genomes. *Nature,* 2010; 463: 84-87.

[21] Hecht M, Nitz N, Araujo P. Genes from Chagas parasite can transfer to humans and be passed on to children. Inheritance of DNA Transferred from American Trypanosomes to Human Hosts. *PLoS ONE,* 2010; 5: 2.

[22] Flam F. Hints of a language in junk DNA. *Science,* 1994; 266: 1320.

[23] Horbach S, Sahm H, Welle R. Isoprenoid biosynthesis in bacteria: two different pathways? *FEMS Microbiol Lett.,* 1993; 111: 135-140.

[24] . Gupta RS. Protein phylogenetics and signature sequences: a reappraisal of evolutionary relationship among archaebacteria, eubacteria, and eukaryotes. *Microbiol Mol Biol Rev*., 1998; 62: 1435-1491.

[25] Hanage W, Fraser C, Spratt B. Fuzzy species among recombinogenic bacteria. *BMC Biology*, 2005; 3: 6-10.

[26] Webb JS, Givskov M, Kjelleberg S. Bacterial biofilms: prokaryotic adventures in multicellularity. *Curr Opin Microbiol.,* 2003; 6(6): 578-85.

[27] Whitchurch CB, Tolker-Nielsen T, Ragas PC, Mattick JS. Extracellular DNA Required for Bacterial Biofilm Formation. *Science,* 2002; 295(5559): 1487.

[28] Chen Y, Cai T, Wang H. Regulation of intracellular cholesterol distribution by Na/K-ATPase. *J Biol Chem.,* 2009; 284(22): 14881-90.

[29] Fritzsche M. Seasonal correlation of sporadic schizophrenia to Ixodes ticks and Lyme borreliosis. *Int J Health Geogr.,* 2002; 1(1): 2.

[30] Waltrip RW 2nd, Buchanan RW, Summerfelt A, Breier A, Carpenter WT Jr, Bryant NL, Rubin SA, Carbone KM. Borna disease virus and schizophrenia. *Psych Res.,* 1995; 56(1): 33-44.

[31] Torrey EF, Yolken RH. Toxoplasma gondii and schizophrenia. *Emerg Infect Dis.,* 2003; 9(11): 1375-80.

[32] Poole AM. Did group II intron proliferation in an endosymbiont-bearing archaeon create eukaryotes? *Biol Direct,*. 2006; 1: 36-40.

[33] Villarreal LP. How viruses shape the tree of life. *Future Virology*, 2006; 1(5): 587-595.

[34] Lockwood M. *Mind, Brain and the Quantum*. Oxford: Blackwell, 1989.

[35] Lefebvre P, Cariou B, Lien F, Kuipers F, Staels B. Role of bile acids and bile acid receptors in metabolic regulation. *Physiol Rev.*, 2009; 89(1): 147-191.

[36] Eberl M, Hintz M, Reichenberg A, Kollas A, Wiesner J, Jomaa H. Microbial isoprenoid biosynthesis and human γδ T cell activation. *FEBS Lett.*, 2010; 544(1): 4-10.

[37] Wallace DC. Mitochondria and Cancer: Warburg Addressed. *Cold Spring Harbor Symp Quant Biol.*, 2005; 70: 363-374.

Chapter 2

Neurology of Human Creativity

Introduction

Creativity is a human faculty associated with the creation of works of art, literature and science. Creative individuals tend to have a higher incidence of temporal lobe epilepsy and psychiatric disorders like schizophrenia. Studies from our laboratory have demonstrated increased synthesis of the endogenous membrane Na^+-K^+ ATPase inhibitor, archaeal digoxin, in seizure disorder and schizophrenia. Archaeal digoxin is a steroidal glycoside synthesized by the isoprenoid pathway. It was therefore considered pertinent to study the digoxin status and the isoprenoid pathway related cascade in creative individuals. Digoxin can regulate the neuronal membrane amino acid transport and can thus modulate multiple neurotransmitter systems. It could thus play a role in the genesis of cerebral dominance. The digoxin status and the isoprenoid pathway related cascade was also studied in individuals of differing hemispheric dominance in order to find out the role of hemispheric dominance in creativity.

Results

(1) The results showed that creative individuals had increased HMG CoA reductase activity and serum digoxin as well as decreased RBC Na^+-K^+ ATPase activity and serum magnesium levels. The results showed that non-creative individuals had decreased HMG CoA reductase activity and serum digoxin levels with increased RBC membrane RBC Na^+-K^+ ATPase activity and serum magnesium levels.

(2) The results showed that non-creative individuals had increased levels of tyrosine and its catabolites (dopamine and noradrenaline and morphine) and reduced levels of tryptophan and its catabolites (serotonin, quinolinic acid, strychnine and nicotine). The results showed that creative individuals had decreased levels of tyrosine and its catabolites (dopamine,

noradrenaline and morphine) and increased levels of tryptophan and its catabolites (serotonin, quinolinic acid, strychnine and nicotine).

(3) Serum digoxin levels were increased and RBC Na^+-K^+ ATPase activity was reduced in right hemispheric dominant individuals. Serum digoxin levels were reduced and RBC Na^+-K^+ ATPase increased in left hemispheric dominant individuals. The bihemispheric dominant individuals had intermediate values. The levels of tryptophan, serotonin, quinolinic acid, nicotine and strychnine were elevated while that of tyrosine, dopamine, noradrenaline and morphine decreased in right hemispheric dominant individuals. The levels of tryptophan, serotonin, quinolinic acid, nicotine and strychnine decreased while that of tyrosine, dopamine, noradrenaline and morphine increased in left hemispheric dominant individuals.

Discussion

Archaeal Digoxin and Membrane Na^+-K^+ ATPase Inhibition in Relation to Human Creativity

The archaeaon steroidelle DXP pathway and the upregulated pentose phosphate pathway contribute to digoxin synthesis. The results showed that creative individuals had increased digoxin synthesis and decreased membrane Na^+-K^+ ATPase activity with decreased serum magnesium levels. The increased levels of digoxin could be due to its increased synthesis. Studies from our laboratory have demonstrated the synthesis of endogenous digoxin - a steroidal glycoside by the isoprenoid pathway. Digoxin can inhibit membrane Na^+-K^+ ATPase activity. Membrane Na^+-K^+ ATPase inhibition can lead to an increase in intracellular calcium and a reduction in intracellular magnesium.

The increase in serum digoxin levels in creativity is significant. Digoxin, a membrane Na^+-K^+ ATPase inhibitor probably regulates conscious perception. The elements of conscious perception include perceptual binding, focused attention and short-term memory. The evidence of increased hypothalamic archaeal digoxin points to a role for the hypothalamus. The hypothalamus is connected to the thalamus by the mamillothalamic tract and digoxin may play a role in regulating these synapses. There are two-way connections between the cerebral cortex and the thalamic nucleus. There are also two-way connections between the cerebral cortex and hypothalamus and digoxin may possibly regulate these synapses also. The hypothalamus - thalamus - cerebral cortex reverberatory circuit would play a role in mediating conscious perception.

Perceptual binding important in consciousness occurs when all the neurons associated with any one object's perceptual map in layer 5 of the cerebral cortex, fire in bursts and in a synchronised pattern but out of sync with those representing other objects. When an object is perceived there is a simultaneous activation of the cerebral cortex-hypothalamic two-way connections and liberation of digoxin from the hypothalamus to stimulate the widely dispersed cerebral cortical neurons receiving the incoming perception and their resultant synchronised burst-firing. Digoxin, by the sodium potassium ATPase inhibition it produces, can lead to a paroxysmal depolarisation shift resulting in sustained synchronised burst firing of cerebral cortical neurons.

Short-term memory important in conscious perception depends on the hypothalamic-thalamic-cerebral cortex reverberatory circuit as well as the phenomena of sustained synchronised burst-firing of neurons in layer 5 of the cerebral cortex. Sustained synchronised burst firing produced by digoxin can temporarily strengthen the relevant synapses so that this particular pattern of firing is recalled quickly; a type of short term memory. Transient synaptic changes of this type are due to an alteration in the presynaptic neuronal calcium

produced by digoxin. The thalamic-cerebral cortex reverberatory circuit mediating short term memory is glutamatergic and digoxin could amplify the circuit by its inhibitory effect on glial uptake of glutamate and increasing synaptic glutamate content.

All axons that pass either way between the cerebral cortex and thalamic nucleus must go through the thalamic reticular nucleus and all give off collateral excitatory glutamatergic branches that innervate the reticular nucleus. The reticular nucleus in turn provides an inhibitory GABAergic innervation back to the thalamic nucleus that provides the input. The reticular nucleus is involved in mediating selective attention by intensifying or detaching a particular active thalamic input into the cortex. The amplification or focusing and detachment of attention occurs by digoxin's effect in promoting glutamatergic transmission in the collaterals to the reticular nucleus by inhibiting the glial uptake of the glutamate and increasing its synaptic content. The back projections from the cerebral cortical perceptual map of the external world to the hypothalamus decides whether hypothalamic archaeal digoxin should act on the glutamatergic collaterals to the reticular nucleus and thus, focus or detach attention.

The increased secretion of archaeal digoxin in creative individuals produces a hyperconscious state with increased focused attention, perceptual binding and short-term memory.

Archaeal digoxin could also possibly mediate quantal or extrasensory perception. Intuitive phenomena are common in creative individuals and could form the basis of the creative achievements. The perceived element in quantal or subliminal perception which could play a role in creativity could be the quanta of light, sound, vibration pressure and matter-dependent electric and magnetic fields. The brain functions as a quantum computer with the quantum computer memory elements comprised of superconducting quantum

interference devices (the SQUIDS which can exist as superpositions of macroscopic states).

Bose condensation, the basis of superconductivity, is achievable at room temperature in the Frohlich model in biological systems. The dielectric protein molecules and polar sphingolipids of the neuronal membrane; nucleosomes which are a combination of basic histones and nucleic acid and cytoplasmic magnetite molecules; are excellent electric diplole oscillators which exist under a steep neuronal membrane voltage gradient. The individual oscillators are energised with a constant source of pumping energy from outside, by digoxin binding to membrane sodium potassium ATPase and producing a paroxysmal depolarisation shift in the neuronal membrane. This prevents the dipole oscillators from ever settling into thermal equilibrium with the cytoplasma and the interstitial fluid which is always kept at constant temperature. There are connections between the hypothalamus and cerebral cortex, and digoxin may serve as a neurotransmitter for these synapses. Bose condensed states produced by a digoxin mediated dielectric protein molecular-pumped phonon system could be used to store information which might be encoded (all within the lowest collective frequency mode) by appropriately adjusting the amplitudes of and phase relations between the dipole oscillators. The external world sensory impressions exists in the cortical dipole oscillators as probabilistic multiple superimposed patterns; the U phase of quantum mechanics.

The part of the incoming quantal data maps of the external world built by subliminal perception in logical sequence and corollary to the cerebral cortical external world maps built by conscious perception was chosen. Hypothalamo-cerebral cortical connections mediated by digoxin acting on the neuronal membrane help to magnify the chosen map to I graviton criteria and to the threshold required for the neuronal network to fire and consciousness. It is then integrated into the cerebral cortical conscious perceptual external world

map. A comparison is found by a quantal non-local quasicrystal tiling effect which mediates the activation and deactivation of synapses through the contraction and growth of dendritic spines.

This model of quantal perception provides a mechanism for extrasensory or subliminal perception. The increased digoxin level produces increased efficiency of the quantal of subliminal perception in creative individuals. The R part of quantal subthreshold perception is not deterministic and it introduces a completely random element into the time evolution, and in the operation of R there might be a role for free will, an important component of conscious perception.

Archaeal Digoxin and Regulation of Neurotransmitter Synthesis and Function in Relation to Human Creativity

The archaeaon neurotransminoid shikimic acid pathway contributes to tryptophan and tyrosine synthesis and catabolism generating neurotransmitters and neuroactive alkaloids. There is an increase in tryptophan and a reduction in tyrosine and their catabolites in the serum of spiritually inclined individuals. This could be due to the fact that digoxin can regulate neutral amino acid transport systems with preferential promotion of tryptophan transport over tyrosine. The decrease in membrane Na^+-K^+ ATPase activity in spiritually inclined individuals could be due to the fact that the hyperpolarising neurotransmitters (dopamine, morphine and noradrenaline) are reduced and the depolarising neuroactive compounds (serotonin, strychnine, nicotine and quinolinic acid) are increased. Studies from our laboratory have demonstrated the synthesis of endogenous morphine from tyrosine and endogenous strychnine and nicotine from tryptophan.

In the presence of hypomagnesemia, the magnesium block on the NMDA receptor is removed leading to NMDA excitotoxicity. The increased presynaptic

neuronal calcium can produce cyclic AMP dependent phosphorylation of synapsins resulting in increased glutamate release into the synaptic junction and vesicular recycling. Increased intracellular calcium in the postsynaptic neuron can also activate the NMDA signal transduction in the postsynaptic neuron. The membrane glutamate transporter (on the surface of the glial cell and presynaptic neuron) is coupled with a sodium gradient which is disrupted by the inhibition of Na^+-K^+ ATPase; resulting in decreased clearance of glutamate by presynaptic and glial uptake at the end of synaptic transmission. By these mechanisms, inhibition of Na^+-K^+ ATPase can promote glutamatergic transmission. Glutamatergic transmission has been related to long-term potentiation (LTP), which is important in learning and memory. Increased glutamatergic transmission could thus lead to increased creativity. Glutamate excitotoxicity is important in epileptogenesis, common in creative individuals.

Creative individuals had reduced dopaminergic, morphinergic and noradrenergic transmission, but they had increased serotoninergic, strychninergic and nicotinergic transmission. Nicotine promotes cholinergic transmission. Increased cholinergic transmission in the cerebral cortex could contribute to increased memory, intelligence and creativity. Strychnine levels are increased in creative individuals. The blocking of glycinergic inhibitory transmission may lead to increased creativity. Both nicotine and strychnine are CNS stimulants.

The schizoid neurotransmitter pattern of reduced dopamine, noradrenaline and morphine and increased serotonin, strychnine and nicotine is seen in creative individuals and could be predisposed to its development. Quinolinic acid, an NMDA agonist can contribute to NMDA excitotoxicity reported in schizophrenia. Strychnine, by blocking glycinergic transmission can contribute to the decreased inhibitory transmission in schizophrenia. Recent data suggest that the initial abnormality in schizophrenia involves a hypodopaminergic state

and the low dopamine levels now observed agrees with this. Nicotine by interacting with nicotine receptors can facilitate the release of dopamine, promoting the dopaminergic transmission in the brain. This can explain the increased dopaminergic transmission in the presence of decreased dopamine levels. The increased serotoninergic activity and reduced noradrenergic outflow from locus coeruleus reported earlier in schizophrenia agrees with our finding of elevated serotonin and reduced noradrenaline levels. A schizophreniform neurotransmitter pattern contributes to the development of human creativity. Inhibition of Na^+-K^+ ATPase can also result in defective neuronal membrane repolarisation and a paroxysmal depolarization shift resulting in epileptogenesis. Temporal lobe epileptic phenomena are common in creative individuals.

Archaeal Digoxin and Hemispheric Dominance in Relation to Family Bonding Behaviour

The archaeaon related organelle - steroidelle, neurotransminoid and vitaminocyte contribute to hemispheric dominance. The neurotransmitter patterns of reduced dopamine, morphine and noradrenaline and increased serotonin, strychnine and nicotine is associated with right hemispheric dominance. Right hemispheric dominant individuals may have an increased predilection for creative tendencies. Right hemispheric perception and memory is of the telescopic form, where you see the wood as a whole but not the discrete trees. The right hemisphere is concerned with intuition. Creative pursuits are intuitive and impulsive. There is no logic in creative pursuits. The right hemisphere is also the site for perception of music, dancing and painting pursuits. It is the seat of geometric constructions. This all contributes to creativity. Left hemispheric dominant individuals have reduced digoxin levels, increased levels of dopamine, noradrenaline and morphine and reduced levels of strychnine, nicotine and serotonin. These neurotransmitter patterns and hypodigoxinemia could be related to lack of creativity in non-creative individuals.

References

[1] Kurup RK, Kurup PA. *Hypothalamic Digoxin, Cerebral Dominance and Brain Function in Health and Diseases*. New York: Nova Medical Books, 2009.

Chapter 3

Neurology of Human Spirituality

Introduction

Spirituality is one of the most evolved of human emotions. Spiritual tendencies have been related to temporal lobe epileptic phenomena. Previous studies have demonstrated membrane Na^+-K^+ ATPase inhibition and elevated levels of an endogenous inhibitor of membrane Na^+-K^+ ATPase in seizure disorder. Archaeal digoxin is a steroidal glycoside and is reported to be synthesized via the isoprenoid pathway. Digoxin can modulate the neuronal membrane transport of amino acids and can regulate synaptic transmission. It was therefore considered pertinent to study the digoxin synthesis and neurotransmitter patterns in individuals who are spiritually inclined and atheistic. Since digoxin can regulate multiple neurotransmitter systems it could also play a role in the genesis of cerebral dominance. The digoxin synthesis and neurotransmitter patterns were also assessed in individuals of differing hemispheric dominance to find out the role of hemispheric dominance in spiritual behaviour.

Results

(1) The results showed that spiritually inclined individuals had increased HMG CoA reductase activity and serum digoxin as well as decreased RBC Na^+-K^+ ATPase activity and serum magnesium levels. The results showed that spiritually non - inclined individuals had decreased HMG CoA reductase activity and serum digoxin levels with increased RBC membrane RBC Na^+-K^+ ATPase activity and serum magnesium levels.

(2) The results showed that spiritually non-inclined individuals had increased levels of tyrosine and its catabolites (dopamine, noradrenaline and morphine) and reduced levels of tryptophan and its catabolites (serotonin, quinolinic acid, strychnine and nicotine). The results showed that spiritually inclined individuals had decreased levels of tyrosine and its catabolites (doparnine,

noradrenaline and morphine) and increased levels of tryptophan and its catabolites (serotonin, quinolinic acid, strychnine and nicotine).

(3) Serum digoxin levels were increased and RBC Na^+-K^+ ATPase activity were reduced in right hemispheric dominant individuals. Serum digoxin levels were reduced and RBC Na^+-K^+ ATPase was increased in left hemispheric dominant individuals. The bihemispheric dominant individuals had intermediate values. The levels of tryptophan, serotonin, quinolinic acid, nicotine and strychnine were elevated and that of tyrosine, dopamine, noradrenaline and morphine decreased in right hemispheric dominant individuals. The levels of tryptophan, serotonin, quinolinic acid, nicotine and strychnine were decreased and that of tyrosine, dopamine, noradrenaline and morphine, increased in left hemispheric dominant individuals.

Discussion

Archaeal Digoxin and Membrane Na^+-K^+ ATPase Inhibition in Relation to Spirituality

The archaeaon steroidelle DXP pathway and the upregulated pentose phosphate pathway contribute to digoxin synthesis. The results showed that spiritually inclined individuals had increased digoxin synthesis and decreased membrane Na^+-K^+ ATPase activity with decreased serum magnesium levels. The increased levels of digoxin could be due to its increased synthesis. Studies from our laboratory have demonstrated the synthesis of endogenous digoxin - a steroidal glycoside by the isoprenoid pathway. Digoxin can inhibit membrane Na^+-K^+ ATPase activity. Membrane Na^+-K^+ ATPase inhibition can lead to an increase in intracellular calcium and a reduction in intracellular magnesium. Inhibition of Na^+-K^+ ATPase can also result in defective neuronal membrane repolarisation and a paroxysmal depolarization shift resulting in epileptogenesis.

Temporal lobe epileptic phenomena have been documented in spiritually inclined individuals.

Hypothalamic archaeal digoxin may play a role in the genesis of quantal perception important in spiritual experiences. Quantal perception is important in meditatory states and spiritual trances where the world does not exist for the individual, who merges into the quantal state during the period of intense meditation. A quantal perception model of brain function has been postulated by several groups of workers. Though conscious perception is the dominant form of perception in the brain, external world information is also gained by quantal perception for integration into the conscious cortical perceptual data bank. The perceived element in quantal or subliminal perception could be the quanta of matter dependent electric and magnetic fields. The brain functions as a quantum computer with the quantum computer memory elements constituted of superconducting quantum interference devices (the SQUIDS) which can exist as superpositions of macroscopic states. Bose condensation, the basis of superconductivity, is achievable at room temperature in the Frohlich model in biological systems. The dielectric protein molecules and polar sphingolipids of the neuronal membrane, the nucleosomes (which are a combination of basic histones and nucleic acid) and cytoplasmic magnetite molecules, are excellent electric dipole oscillators which exist under a steep neuronal membrane voltage gradient. The individual oscillators are energised with a constant source of pumping energy from outside, by digoxin binding to membrane Na^+-K^+ ATPase and producing a paroxysmal depolarisation shift in the neuronal membrane. This prevents the dipole oscillators from over-settling into thermal equilibrium with the cytoplasm and interstitial fluid which is always kept at constant temperature. This results in a neuronal quantal state. There are direct connections between the hypothalamus and cerebral cortex and digoxin may serve as a neurotransmitter for these hypothalamo-cortical synapses. Bose condensed states produced by digoxin

mediated dielectric protein molecular pumped phonon systems could be used to store information which might be encoded (all within the lowest collective frequency mode) by appropriately adjusting the amplitudes of and phase relations between the dipole oscillators. The external world sensory impressions exist in the cortical dipole oscillators as probabilistic multiple superimposed patterns the U phase of quantum mechanics. The part of the incoming quantal data maps of the external world built by quantal perception in logical sequence and corollary to the pre-existing cortical external world maps built by conscious perception was chosen. Hypothalamo-cortical connections mediated by digoxin acting on the neuronal membrane help to magnify the chosen map to 1 graviton criteria and to the threshold required for the neuronal network to fire and consciousness. It is then integrated in to the cortical conscious perceptual external world map. The comparison between quantal perceptive maps and conscious perceptual maps of the external world occurs by the quantal non-local quasicrystal tiling effect which mediates the activation and deactivation of synapses through the contraction and growth of dendritic spines. This model of quantal perception provides a mechanism for extrasensory or subliminal perception. The R part of quantal subthreshold perception is not deterministic and it introduces a completely random element into the time evolution, and in the operation of R there might be a role for free will, an important component of conscious perception. The increased digoxin levels leads to increased efficiency of quantal perception in spiritually inclined individuals.

Archaeal Digoxin and Regulation of Neurotransmitter Synthesis and Function in Relation to Spirituality

The archaeaon neurotransminoid shikimic acid pathway contributes to tryptophan and tyrosine synthesis and catabolism generating neurotransmitters and neuroactive alkaloids. There is an increase in tryptophan and its catabolites and a reduction in tyrosine and its catabolites in the serum of spiritually inclined

individuals. This could be due to the fact that digoxin can regulate neutral amino acid transport system with preferential promotion of tryptophan transport over tyrosine. The decrease in membrane Na^+-K^+ ATPase activity in spiritually inclined individuals could be due to the fact that the hyperpolarising neurotransmitters (dopamine, morphine and noradrenaline) are reduced and the depolarising neuroactive compounds (serotonin, strychnine, nicotine and quinolinic acid) are increased. Studies from our laboratory have demonstrated the synthesis of endogenous morphine from tyrosine and endogenous strychnine and nicotine from tryptophan.

Dopamine deficiency in epilepsy and dopamine receptor blockade producing epileptogenesis has been documented in literature. This could contribute to temporal lobe epileptogenesis in spiritually inclined individuals. Dopamine and morphine have been related to bonding behaviour. The low levels of dopamine and morphine in spiritually inclined individuals lead to a detached behaviour important in spiritual evolution. The increase in serotonin levels documented here is also significant, as serotonin is a positive modulator of the excitotoxic NMDA receptor and could contribute to temporal lobe epileptogenesis. The decrease in the noradrenaline observed can also contribute to epileptogenesis, since this catacholamine has been reported to have an antiepileptic action owing to its hyperpolarising effect on neuronal membrane. Quinolinic acid, an NMDA agonist, can contribute to NMDA excitotoxicity reported in epilepsy. Strychnine by blocking glycinergic transmission contributes to the decreased inhibitory transmission important in epileptogenesis. Strychnine displaces glycine from its binding Sites and the glycine is free to bind to the strychnine insensitive site of the NMDA receptor and promote excitatory NMDA transmission. Nicotine acts as a CNS stimulant and has been reported to promote epileptogenesis. Temporal lobe epileptogenesis has already been described to be related to spiritual tendencies.

In the presence of hypomagnesemia, the magnesium block on the NMDA receptor is removed leading to NMDA excitotoxicity. The increased presynaptic neuronal calcium can produce cyclic AMP dependent phosphorylation of synapsins resulting in increased glutamate release into the synaptic junction and vesicular recycling. Increased intracellular calcium in the post synaptic neuron can also activate the NMDA signal transduction in the postsynaptic neuron. The membrane glutamate transporter (on the surface of the glial cell and presynaptic neuron) is coupled to a sodium gradient which is disrupted by the inhibition of Na^+-K^+ ATPase, resulting in decreased clearance of glutamate by presynaptic and glial uptake at the end of synaptic transmission. By these mechanisms, inhibition of Na^+-K^+ ATPase can promote glutamatergic transmission and excitotoxicity contributing to temporal lobe epileptogenesis and spirituality.

The schizoid neurotransmitter pattern of reduced dopamine, noradrenaline and morphine and increased serotonin, strychnine and nicotine is also seen in spiritually inclined individuals and could predispose its development. Quinolinic acid, an NMDA agonist can contribute to NMDA excitotoxicity reported in schizophrenia. Strychnine, by blocking glycinergic transmission can contribute to the decreased inhibitory transmission in schizophrenia. Recent data suggest that the initial abnormality in schizophrenia involves a hypodopaminergic state and the low dopamine levels now observed agrees with this. Nicotine by interacting with nicotine receptors can facilitate the release of dopamine, promoting the dopaminergic transmission in the brain. This can explain the increased dopaminergic transmission in the presence of decreased dopamine levels. The increased serotoninergic activity and reduced noradrenergic outflow from locus coeruleus reported earlier in schizophrenia agrees with our finding of elevated serotonin and reduced noradrenaline levels in spiritually inclined individuals. A schizophreniform neurotransmitter pattern contributes to the development of human spirituality.

Archaeal Digoxin and Hemispheric Dominance in Relation to Spirituality

The archaeaon related organelle - steroidelle, neurotransminoid and vitaminocyte contribute to hemispheric dominance. The neurotransmitter patterns of reduced dopamine, morphine and noradrenaline and increased serotonin, strychnine and nicotine is associated with right hemispheric dominance. Right hemispheric dominant individuals may have an increased predilection for spiritual tendencies. The right hemisphere is the seat of altruistic and spiritual tendencies. Right hemispheric perception and memory is of the telescopic form, where you see the wood as a whole but not the discrete trees. This type of perception is important in the development of spirituality. The right hemisphere is also the site of perception of music and art, especially dancing pursuits. Music and dancing is associated with spiritual experience. Right hemispheric dominant individuals tend to be detached and unaffectionate because of the elevated digoxin synthesis and reduced levels of dopamine and morphine. Dopamine and morphine is associated with bonding behaviour. This could lead to the development of spiritual tendencies. Left hemispheric dominant individuals have reduced digoxin levels, increased levels of dopamine, noradrenaline and morphine and reduced levels of strychnine, nicotine and serotonin. Increased levels of dopamine and morphine leads to increased family bonding which is a block on the development of spirituality. The left hemispheric neurotransmitter patterns and hypodigoxinemia could be related to a lack of spiritual tendencies in atheistic individuals. Hypothalamic archaeal digoxin and hemispheric dominance may decide the predilection toward atheism and spirituality.

References

[1] Kurup RK, Kurup PA. *Hypothalamic Digoxin, Cerebral Dominance and Brain Function in Health and Diseases*. New York: Nova Medical Books, 2009.

Chapter 4

Archaea Induced Stem Cell Syndrome and Androgynous Creative Matriarchal Cannibalistic Capitalistic State

Introduction

The global warming produces extremes of temperature and accumulation of atmospheric carbon dioxide resulting in growth of symbiotic extremophiles like archaea. Archaea can induce dedifferentiation of somatic cells to stem cells. This involves the process of reverse aging. The differentiated somatic cells lose their function as they become stem cells. The archaeal magnetite induces quantal extrasensory perception of low level of EMF as the somatic neuronal cells lose their function. This results in low level of EMF effect on the brain producing cortical atrophy especially the prefrontal cortex. The primitive parts of the brain dominate with cerebellum and brain stem undergoing hypertrophy. The atrophy of the cortex results in behavioural changes. The cortex has different hemispheric dominance in males and females. The right hemisphere is a creative hemisphere and is male. The left hemisphere is the practical hemisphere and is female. When the cortex atrophies the hemispheric differentiation and the effect on behavior is obliterated. The cortical effect on male and female behavior is lost. Behaviour becomes uniform and single and is dominated by the primitive brain stem and cerebellar cortex. It results in impulsive behavior dominated by the will to power and individuality. This forms the basis of the androgynous state and alternate forms of sexuality. This hypothesis was studied in this paper by checking the archaeal growth in population with alternate sexual traits.[1-17]

Materials and Methods

The blood samples were drawn from 15 normal individuals with alternate sexual traits and cytochrome F420 activity was studied. The estimations done in the blood samples collected blood lactate, pyruvate, hexokinase, cytochrome C, digoxin, bile acids, butyrate and propionate were estimated.

Results

The results showed that the individuals with alternate sexual traits had increased archaeal symbiosis and increased cytochrome F420 activity. They also had increased blood lactate and pyruvate, increased RBC hexokinase, increased serum cytochrome C and serum cytochrome F420, increased serum digoxin, bile acids, butyrate and propionate. The serum cytochrome C levels in the blood were increased. This suggested mitochondrial dysfunction. There was an increased in glycolysis as suggested by increased RBC hexokinase activity and lactic acidosis. Owing to the mitochondrial dysfunction and pyruvate dehydrogenase inhibition there was pyruvate accumulation. The pyruvate was converted to lactate by the Cori cycle and also to glutamate and ammonia. This metabolism is suggestive of the Warburg phenotype and stem cell conversion. The stem cells depend on Warburg anaerobic glycolysis for energetics and have a mitochondrial dysfunction. The lysosomal enzyme beta galactosidase activity was increased in the disease group and in creative artists and criminals suggesting stem cell conversion. This suggests that individuals with androgynous traits had stem cell metabolonomics and stem cell conversion.

Table 1

Group	Cytochrome F420		Serum cyto C (ng/ml)		Lactate (mg/dl)		Pyruvate (umol/l)		RBC hexokinase (ug glu phos / hr/mgpro)	
	Mean	± SD	Mean	± SD	Mean	± SD	Mean	± SD	Mean	± SD
Normal population	1.00	0.00	2.79	0.28	7.38	0.31	40.51	1.42	1.66	0.45
Alternate sexual traits	4.00	0.00	12.39	1.23	25.99	8.10	100.51	12.32	5.46	2.83
Low level background radiation	4.00	0.00	12.26	1.00	23.31	1.46	103.28	11.47	7.58	3.09
F value	0.001		445.772		162.945		154.701		18.187	
P value	< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	

Table 2

Group	ACOA (mg/dl)		Glutamate (mg/dl)		Se. ammonia (ug/dl)		RBC digoxin (ng/ml RBC Susp)		Beta galactosidase activity in serum (IU/ml)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal population	8.75	0.38	0.65	0.03	50.60	1.42	0.58	0.07	17.75	0.72
Alternate sexual traits	2.51	0.36	3.19	0.32	93.43	4.85	1.41	0.23	55.17	5.85
Low level background radiation	2.14	0.19	3.47	0.37	102.62	26.54	1.41	0.30	51.01	4.77
F value	1871.04		200.702		61.645		60.288		194.418	
P value	< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	

Discussion

The cortical atrophy and cerebellar/brain stem dominance results in obliteration in hemispheric difference in sexual behavior. The right hemisphere is creative and male in outlook while left hemisphere is practical and female in outlook. The primitive parts of the brain take over the function of regulating sexual behavior. The cerebellum plays an important role and this results in impulsive sexual traits. The difference between male and female sexual behaviours induced by cerebral cortical function is lost. The archaeal cholesterol catabolism results in depletion of sex steroids and deficiency of testosterone and estrogens. The archaeal induced conversion of ovarian and testicular cells into stem cells results in loss of function and decreased secretion of male and female hormones. Behaviour becomes unisexual. This becomes non-inhibitory and impulsive in nature. It transcends all taboos and has got a reflection in culture and society affecting all manners of social interaction. The predominant form of brain perception is extrasensory or quantal. The primitive human impulses become unleashed and this results in a flood of primitive behavioural traits with violent, aggressive and obscene traits in society. The increased incidence of violent sexual behavioural traits is related to the

dominance of the primitive areas of the brain - the cerebellum and brain stem. The dress code of the society also changes and results in metrosexual and unisexual garments. The mode of grooming of male and female changes and both becomes equal and the same. This creates the metrosexual world.[1-17]

The dominance of the primitive areas of the brain results in fear flight and fight response resulting in an epidemic of selfishness in society. Individualism takes over and there is no commitment to the society as such. Sexual behaviours were programmed for the benefit of the society so that the human population is replaced. The cortical atrophy and cerebellar dominance results in selfish sexual behavioural traits producing sexual behavior for individual pleasure and gratification in animalistic sense. This results in loss of family values and declining population as is seen in European countries. The cerebral cortical atrophy and dominance of cerebellum result in selfishness and individuality contributing to an anarchic society. The cerebral cortical atrophy results from perception of low level of EMF resulting from increased archaeal magnetite as well as EMF pollution resulting from internet exposure. Society becomes globalized and anarchic fueled by the internet. This results in an acortical acephalic society with dominant primitive cerebellar function. There is no compassion, love, feeling of altruism or goodness. This is replaced by selfishness and individuality. The internet and social media becomes the common market place for interactions. The feeling of human touch and love is lost. Society becomes increasingly robotical and autistic. The realm of the senses takes over the kingdom of God. Everything becomes subsumed and sacrificed in the altar of selfishness, greed and pleasure. This produces an anarchic, unisexual and society of primitive impulses. The cortical atrophy and cerebellar dominance results in a play of primitive impulses resulting in violence and aggression. This results from a culture of selfishness. This produces terrorism and acts of war which are a form of trancedence. This also produces criminal behavior where individuality and

selfishness dominates. Society becomes dominated by ritualized and in some cases obscene behavior.[1-17]

The cortical atrophy and dominance of cerebellum result in loss of cortical neuronal function and increased extrasensory perception mediated by archaeal magnetite. This results in dominant spiritual behaviours where one comes into contact with the eternal and archetypes. This results in a literature of trancedence. This produces what is called as magic realism of writers like Gabriel Marquez. The literature explores the evil depths of the human soul. This results in a dominance of sexual, violent, obscene and evil in literature as seen in post modern literature. This has also a reflection in art of painting, dance and music. Painting, dance and music become surreal and the rationality of the cortex regulating it is lost. This results in psychedelic and rock music as well as the surrealistic abstract art of Picasso. Dance forms also take violent, obscene, chaotic forms. This is an art of the surrealistic acephalic irrational world in the realm of senses driven by obscenity. This type of art and literature correlates with the androgynous creativity.[1-17]

The prefrontal cortical atrophy and cerebellar dominance is due to archaeal growth which results in stem cell conversion. The stem cell syndrome can produce a proliferation of systemic diseases. The neuronal stem cell conversion results in loss of neuronal function and dominant extrasensory archaeal magnetite mediated perception. This produces an epidemic of schizophrenia and autism. The stem cells have the Warburg phenotype with mitochondrial dysfunction and glycolytic energetics. This results in metabolic syndrome X. The stem cells can proliferate resulting in cancer syndromes. The lymphocytic stem cells proliferate producing an autoimmune disease. The neuronal stem cells transformation and loss of function can lead to degenerations. Thus the systemic somatic and neuropsychiatric diseases correlate with alternate sexual traits and stem cell transformation.[1-17]

The archaeal symbiosis mediated brain changes producing cerebellar dominance and cortical atrophy results in an individualistic selfish society. This is the kernel of capitalistic growth and models which tend to fail because of the individualistic will to power and dominate at all cost. The society becomes more dictatorial and fascism and nazistic behavior takes over. There is individualistic trait of selfishness and a primitive impulse to follow the leader. The civil society which is just, good, equal, socialistic, democratic and fair generated by cortical impulses becomes dead. The society which is governed by cerebellar function and unisexual tendencies becomes more matriarchal as men and women tend to have similar traits. Women also tend to be as aggressive if not more than men. The cortical hemispheric control over social and individual behavior is lost. It becomes the primitive world of selfishness and individuality uninhibited by sexual mores.[1-17]

The archaeal overgrowth and digoxin synthesis can modulate retroviral growth. Digoxin can modulate RNA editing and retroviral replication. Digoxin can also produce intracellular magnesium deficiency resulting in reverse transcriptase inhibition. Thus the archaeal induced stem cell syndrome is retroviral resistant. This results in changes in the human genome as such. HERV sequences in the human genome functions as jumping genes producing dynamicity and flexibility of the human genome. This is required for the changes in cortical synaptic connectivity, HLA gene flexibility and developmental changes. The archaeal induced stem cell syndrome produces a rigid adynamic genome not able to cope with the complexities of the cortical connectivity, HLA gene rearrangements for immune response and gene changes for complex development. This neanderthalisation of the human body due to archaeal symbiosis can spell the death of the human species. The new human species which may be transient consequent to archaeal symbiosis produced by extremophilic climatic changes consequent to global warming can be called the

human homo neoneanderthalis. It is androgynous, creative, psychedelic, artistic, spiritual, aggressive, violent, selfish, impulsive, anarchic, chaotic and individualistic.[1-17]

References

[1] Weaver TD, Hublin JJ. Neandertal Birth Canal Shape and the Evolution of Human Childbirth. *Proc. Natl. Acad. Sci. USA* 2009; 106: 8151-8156.

[2] Kurup RA, Kurup PA. Endosymbiotic Actinidic Archaeal Mediated Warburg Phenotype Mediates Human Disease State. *Advances in Natural Science* 2012; 5(1): 81-84.

[3] Morgan E. The Neanderthal theory of autism, Asperger and ADHD; 2007, www.rdos.net/eng/asperger.htm.

[4] Graves P. New Models and Metaphors for the Neanderthal Debate. *Current Anthropology* 1991; 32(5): 513-541.

[5] Sawyer GJ, Maley B. Neanderthal Reconstructed. *The Anatomical Record Part B: The New Anatomist* 2005; 283B(1): 23-31.

[6] Bastir M, O'Higgins P, Rosas A. Facial Ontogeny in Neanderthals and Modern Humans. *Proc. Biol. Sci.* 2007; 274: 1125-1132.

[7] Neubauer S, Gunz P, Hublin JJ. Endocranial Shape Changes during Growth in Chimpanzees and Humans: A Morphometric Analysis of Unique and Shared Aspects. *J. Hum. Evol. 2010*; 59: 555-566.

[8] Courchesne E, Pierce K. Brain Overgrowth in Autism during a Critical Time in Development: Implications for Frontal Pyramidal Neuron and Interneuron Development and Connectivity. *Int. J. Dev. Neurosci.* 2005; 23: 153-170.

[9] Green RE, Krause J, Briggs AW, Maricic T, Stenzel U, Kircher M, Patterson N, Li H, Zhai W, *et al*. A Draft Sequence of the Neandertal Genome. *Science* 2010; 328: 710-722.

[10] Mithen SJ. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*; 2005, ISBN 0-297-64317-7.

[11] Bruner E, Manzi G, Arsuaga JL. Encephalization and Allometric Trajectories in the Genus Homo: Evidence from the Neandertal and Modern Lineages. *Proc. Natl. Acad. Sci. USA* 2003; 100: 15335-15340.

[12] Gooch S. *The Dream Culture of the Neanderthals: Guardians of the Ancient Wisdom.* Inner Traditions, Wildwood House, London; 2006.

[13] Gooch S. *The Neanderthal Legacy: Reawakening Our Genetic and Cultural Origins.* Inner Traditions, Wildwood House, London; 2008.

[14] Kurtén B. *Den Svarta Tigern*, ALBA Publishing, Stockholm, Sweden; 1978.

[15] Spikins P. Autism, the Integrations of 'Difference' and the Origins of Modern Human Behaviour. *Cambridge Archaeological Journal* 2009; 19(2): 179-201.

[16] Eswaran V, Harpending H, Rogers AR. Genomics Refutes an Exclusively African Origin of Humans. *Journal of Human Evolution* 2005; 49(1): 1-18.

[17] Ramachandran V. S. The Reith lectures, BBC London. 2012.

Chapter 5

Neanderthal Metabolonomics and Androgynous Behavioural Patterns

Introduction

Neanderthal genes have been described in the homo sapien population. The Neanderthal brain has a prominent cerebellar cortex and small prefrontal cortex. This results in defective vocalization, symbolic speech, impulsive behaviour, obsessive traits, intuition and extrasensory perception. The Neanderthal brain structure results in female dominance and matriarchal social patterns. It was considered plausible that Neanderthal genomics and metabolonomics could also contribute to androgynous behaviour. Autistic patients tend to have Neanderthal metabolonomics and phenotype. It has been demonstrated that Neanderthal phenotype is due to symbiosis by actinidic archaea using cholesterol as an energy substrate. The actinidic archaea catabolizes cholesterol with ring A being oxidized to pyruvate which gets channeled to the GABA shunt pathway resulting in the formation of glycine and succinyl CoA. This results in porphyrin synthesis. The side chain oxidation results in generation of short chain fatty acids. Cholesterol is also converted to steroidogenic estrogens and testosterone. The increasing growth of actinidic archaea converts the body metabolites the cholesterol which is subsequently oxidized and depleted. Cholesterol is also converted by actinidic archaea to endogenous digoxin which helps to integrate the neuro-immuno-endocrine system. Digoxin produces sodium potassium ATPase inhibition and increased in intracellular calcium inducing nitric oxide synthase and heme oxygenase generating gasotransmitters nitric oxide and carbon monoxide important in smooth muscle contraction and autonomic function. The study deals with assessment of Neanderthal metabolonomics in androgynous individuals.[1-16]

Materials and Methods

Fifty healthy individuals with androgynous behaviour and free of any disease were chosen for the study. Each individual had a normal age and sex matched control. The estimations done in the blood samples collected include cytochrome F420 activity, cholesterol oxidase activity - cholesterol ring oxidase activity, cholesterol side chain oxidase activity, digoxin, lactate, pyruvate, ALA levels and hexokinase activity. Neanderthal anthropometry was studied in the androgynous population. The statistical analysis was done by ANOVA. Informed consent and permission of the Ethics Committee was obtained.

Results

The results of the study were as follows. The androgynous individuals had increased cytochrome F420 activity, cholesterol oxidase activity, ring oxidase activity and digoxin synthesis. The androgynous had decreased PDH activity as indicated by increased pyruvate and lactate levels. The androgynous group had increased GABA shunt pathway as indicated by increased pyruvate. The androgynous group had increased porphyrin synthesis as indicated by increased ALA levels. They had increased hexokinase activity indicating a Warburg phenotype in this group. The androgynous group had features of Neanderthal metabolism as indicated by pyruvate dehydrogenase suppression. The androgynous group have the Neanderthal anthropometric phenotype with slanting forehead, large face, stubby nose, prominent mandibles, low 2D:4D ratio, large coarse trunk, macrocephaly and longer second toe as compared to big toe.

Table 1. *Anthropometric features in androgynous population.*

Groups	Neanderthal Anthropometric	Total	Percentage
Normal	0 cases	50	0
Androgyny	40 cases	50	40

Table 2. *Effect of cerium and antibiotics on cytochrome F420.*

Group	CYT F420 % (Increase with Cerium)		CYT F420 % (Decrease with Doxy+Cipro)	
	Mean	± SD	Mean	± SD
Normal	4.48	0.15	18.24	0.66
Androgyny	22.79	2.13	55.90	7.29
F value	306.749		130.054	
P value	< 0.001		< 0.001	

Table 3. *Effect of cerium and antibiotics on digoxin.*

Group	Digoxin (ng/ml) (Increase with Cerium)		Digoxin (ng/ml) (Decrease with Doxy+Cipro)	
	Mean	± SD	Mean	± SD
Normal	0.11	0.00	0.054	0.003
Androgyny	0.55	0.06	0.219	0.043
F value	135.116		71.706	
P value	< 0.001		< 0.001	

Table 4. *Effect of cerium and antibiotics on pyruvate.*

Group	Pyruvate % change (Increase with Cerium)		Pyruvate % change (Decrease with Doxy+Cipro)	
	Mean	± SD	Mean	± SD
Normal	4.34	0.21	18.43	0.82
Androgyny	20.99	1.46	61.23	9.73
F value	321.255		115.242	
P value	< 0.001		< 0.001	

Table 5. *Effect of cerium and antibiotics on delta amino levulinic acid.*

Group	ALA % (Increase with Cerium)		ALA % (Decrease with Doxy+Cipro)	
	Mean	± SD	Mean	± SD
Normal	4.40	0.10	18.48	0.39
Androgyny	23.20	1.57	66.65	4.26
F value	372.716		556.411	
P value	< 0.001		< 0.001	

Table 6

Group	RBC digoxin (ng/ml RBC Susp)		Cytochrome F420		ALA (umol24)		Pyruvate (umol/l)		RBC Hexokinase (ug glu phos / hr/mgpro)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal	0.18	0.05	0.00	0.00	3.86	0.26	23.79	2.51	0.68	0.23
Androgyny	1.38	0.26	4.00	0.00	68.16	4.92	102.48	13.20	8.46	3.63
F value	60.288		0.001		295.467		154.701		18.187	
P value	< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	

Discussion

The study indicates that androgynous individuals tend to have the Neanderthal phenotype with skeletal characteristics. The androgynous individuals may have more of Neanderthal genotype. The metabolonomics in androgyny is suggestive of Neanderthal phenotype. There is increased actinidic archaeal symbiosis as indicated by increase in cytochrome F420 activity. The actinidic archaea uses cholesterol as a metabolic substrate. There is ring oxidation of cholesterol generating pyruvate. The pyruvate enters the GABA shunt pathway producing glycine and succinyl CoA. This results in porphyrin synthesis. The cholesterol is also converted to steroidal glycoside digoxin. Digoxin and porphyrin intercalation in the cell membrane produces sodium potassium ATPase inhibition and accumulation of intracellular calcium. The increase in intracellular calcium induces nitric oxide synthase, heme oxygenase and cystathione synthase generating nitric oxide, carbon monoxide and hydrogen sulphide. This results in vasodilation of the blood spaces in the corpora cavernosa and increasing autonomic function of the genitourinary system resulting in obsessive traits. The increasing cholesterol catabolism by actinidic archaea results in depletion of cholesterol from the body. This produces inhibition of estrogen and testosterone synthesis. This results in an asexual state and androgynous behaviour. The brain function depends on

testosterone and estrogens. The sex hormones modulate hemispheric dominance. The estrogens produce left hemispheric dominance and testosterones produce right hemispheric dominance. The lack of estrogens and testosterones in androgyny results in equidominance. This leads to equal function of the right hemisphere and left hemisphere and a state of creativity mixed with practicality. The right hemisphere is concerned with creative behaviour and the left hemisphere is concerned with practical behaviour. Equidominance results in the generation of a new phenotype with dominance of both creativity and practicality. Equidominance and lack of estrogens and testosterones can contribute to the social state of matriarchy. There is female dominance in society. The behavioural patterns between the male and female section of the population becomes homogenized. This results in generation of matrilineal societies and the demise of patriarchy.

Porphyrinuria and porphyria are the hallmarks of androgyny. This contributes to neuro-immuno-endocrine regulation and disease states associated with androgyny. The cholesterol is catabolized to porphyrins. Porphyrins are dipolar molecules and can contribute to quantal perception which is more in androgyny contributing to creativity, spirituality and extrasensory perceptive modes of this phenotype. Low level electromagnetic fields and its porphyrin messengers can regulate the brain mediating conscious and quantal perception. Porphyrin microarrays serve the purpose of quantal and conscious perception. The archaea and viroids via porphyrin synthesis can regulate the nervous system including the NMDA / GABA thalamo-cortico-thalamic pathway mediating conscious perception. Porphyrin photo-oxidation can generate free radicals which can modulate NMDA transmission. Free radicals can increase NMDA transmission. Free radicals can induce GAD and increase GABA synthesis. ALA blocks GABA transmission and upregulates NMDA. Protoporphyrins bind to GABA receptor and promote GABA transmission. Thus porphyrins can modulate the

thalamo-cortico-thalamic pathway of conscious perception. The dipolar porphyrins in the setting of digoxin induced sodium potassium ATPase inhibition can produce a pumped phonon system mediated Frohlich model superconducting state inducing quantal perception with nanoarchaeal sensed gravity producing the orchestrated reduction of the quantal possibilities to the macroscopic world. ALA can produce sodium potassium ATPase inhibition resulting in a pumped phonon system mediated quantal state involving dipolar porphyrins. Porphyrin molecules have a wave particle existence and can bridge the dividing line between quantal state and particulate state. Thus the porphyrins can mediate conscious and quantal perception. Porphyrins binding to proteins, nucleic acids and cell membranes can produce biophoton emission. Porphyrins by autooxidation can generate biophotons and are involved in quantal perception. Biophotons can mediate quantal perception. Cellular porphyrins photooxidation are involved in sensing of earth magnetic fields and low level biomagnetic fields. Thus porphyrin microarrays can function as a quantal computer mediating extrasensory perception. Porphyrin microarrays in human systems and brain owing to the wave particle nature of porphyrins can bridge the quantal world and particulate world. The porphyrins can modulate hemispheric dominance. There is increased porphyrin synthesis and RHCD and decreased porphyrin synthesis in LHCD. The increase in archaeal porphyrins can contribute to the pathogenesis of schizophrenia and autism. Porphyria can lead to psychiatric disorders and seizures. Altered porphyrin metabolism has been described in autism. Porphyrin by modulating conscious and quantal perception is involved in the pathogenesis of schizophrenia and autism. Thus porphyrins microarrays can function as a quantal brain modulating extrasensory quantal perception. Porphyrin microarrays can function as a quantal brain in communication with digital world and geomagnetic fields. The dipolar porphyrins in the setting of digoxin induced sodium potassium ATPase

inhibition can produce a pumped phonon system mediated Frohlich model superconducting state inducing quantal perception with nanoarchaeal sensed gravity producing the orchestrated reduction of the quantal possibilities to the macroscopic world. ALA can produce sodium potassium ATPase inhibition resulting in a pumped phonon system mediated quantal state involving dipolar porphyrins. Porphyrins by auto-oxidation can generate biophotons and are involved in quantal perception. Biophotons can mediate quantal perception. Porphyrin autooxidation is modulated by low level of electromagnetic fields and geomagnetic fields. Cellular porphyrins photooxidation are involved in sensing of earth magnetic fields and low level biomagnetic fields. Porphyrins can thus contribute to quantal perception. Low level electromagnetic fields and light can induce porphyrin synthesis. Low level EMF can produce ferrochelatase inhibition as well as heme oxygenase induction contributing to heme depletion, ALA synthase induction and increased porphyrin synthesis. Light also induces ALA synthase and porphyrin synthesis. The increased porphyrin synthesized can contribute to increased quantal perception and can modulate conscious perception. The human porphyrin microarrays induced biophotons and quantal fields can modulate the source from which low level EMF and photic fields were generated. Thus the porphyrin generated by extraneous low level EMF and photic fields can interact with the source of low level EMF and photic fields modulating it. Thus porphyrins can serve as a bridge between the human brain and the source of low level EMF and photic fields. This serves as a mode of communication between the human brain and digital EMF storage devices like internet. The porphyrins can also serve as the source of communication with the environment. Environmental EMF and chemicals produce heme oxygenase induction and heme depletion increasing porphyrin synthesis, quantal perception and two-way communication. Thus induction of porphyrin synthesis can serve as a mechanism of communication

between human brain and the environment by extrasensory perception. Porphyrin microarrays can function as quantal computers storing information and can serve the purpose of extrasensory perception. Porphyrins can serve as a two way communicating bridge between digital information storage systems generating low level electromagnetic fields and human systems. The low level of EMF produced by digital system enhances porphyrin synthesis and serves the purpose of two way extrasensory perception and communication. The human porphyrin quantal computers can in turn by biophoton emission modulate digital information storage system.

Low level of electromagnetic fields and its porphyrin messengers can induce the Warburg phenotype. An actinide dependent shadow biosphere of archaea and viroids in the above mentioned disease states is described. The archaea can synthesize porphyrins and induce porphyrin synthesis. Porphyrins have been related to schizophrenia, metabolic syndrome X, malignancy, systemic lupus erythematosis, multiple sclerosis and Alzheimer's diseases. Porphyrins can mediate the effect of low level electromagnetic fields inducing the Warburg phenotype leading to the above mentioned disease states. The Warburg phenotype results in inhibition of pyruvate dehydrogenase and the TCA cycle. The pyruvate enters the GABA shunt pathway where it is converted to succinyl CoA. The glycolytic pathway is upregulated and the glycolytic metabolite phosphoglycerate is converted to serine and glycine. Glycine and succinyl CoA are the substrates for ALA synthesis. The archaea induces the enzyme heme oxygenase. Heme oxygenase converts heme to bilirubin and biliverdin. This depletes heme from the system and results in upregulation of ALA synthase activity resulting in porphyria. Heme inhibits HIF alpha. The heme depletion results in upregulation of HIF alpha activity and further strengthening of the Warburg phenotype. The porphyrin self oxidation results in redox stress which activates HIF alpha and generates the Warburg phenotype. The Warburg

phenotype results in channelling acetyl CoA for cholesterol synthesis as the TCA cycle and mitochondrial oxidative phosphorylation are blocked. The archaea uses cholesterol as an energy substrate. Porphyrin and ALA inhibits sodium potassium ATPase. This increases cholesterol synthesis by acting upon intracellular SREBP. The cholesterol is metabolized to pyruvate and then the GABA shunt pathway for ultimate use in porphyrin synthesis. The porphyrins can self organize and self replicate into macromolecular arrays. The porphyrin arrays behave like an autonomous organism and can have intramolecular electron transport generating ATP. The porphyrin macroarrays can store information and can have quantal perception. The porphyrin macroarrays serve the purpose of archaeal energetics and sensory perception. The Warburg phenotype is associated with malignancy, autoimmune disease and metabolic syndrome X. Low level electromagnetic fields can induce the Warburg phenotype contributing to human disease.

The role of porphyrins and low level electromagnetic fields in regulation of cell functions and neuro-immuno-endocrine integration is discussed. Low levels of EMF fields can induce digoxin synthesis. Protoporphyrin binds to the peripheral benzodiazepine receptor regulating steroid and digoxin synthesis. Increased porphyrin metabolites can contribute to hyperdigoxinemia. Digoxin can modulate the neuro-immuno-endocrine system. Low level of EMF fields can modulate membrane, nucleic acid and protein structure and function via induction of porphyrin synthesis. Porphyrins can combine with membranes modulating membrane function. Porphyrins can combine with proteins oxidizing their tyrosine, tryptophan, cysteine and histidine residues producing crosslinking and altering protein conformation and function. Porphyrins can complex with DNA and RNA modulating their function. Porphyrin interpolating with DNA can alter transcription and generate HERV expression. Low level of EMF fields through modulation of porphyrin metabolism can

produce heme deficiency by inhibiting heme oxygenase and ferrochelatase. Heme deficiency can also result in disease states. Heme deficiency results in deficiency of heme enzymes. There is deficiency of cytochrome C oxidase and mitochondrial dysfunction. The glutathione peroxidase is dysfunctional and the glutathione system of free radical scavenging does not function. The cytochrome P450 enzymes involved in steroid and bile acid synthesis have reduced activity leading to steroid - cortisol and sex hormones as well as bile acid deficiency states. The heme deficiency results in dysfunction of nitric oxide synthase, heme oxygenase and cystathione beta synthase resulting in lack of gasotransmitters regulating the vascular system and NMDA receptor - NO, CO and H_2S. Heme has got cytoprotective, neuroprotective, anti-inflammatory and antiproliferative effects. Heme is also involved in the stress response. Heme deficiency leads to metabolic syndrome, immune disease, degenerations and cancer. Low level electromagnetic fields can modulate cell functions and neuro-immuno-endocrine-genetic integration via induction of porphyrin synthesis. Low level electromagnetic fields via modulating porphyrin metabolism can produce an autonomic neuropathy. Protoporphyrins block acetyl choline transmission producing a vagal neuropathy with sympathetic overactivity. Vagal neuropathy results in immune activation, vasospasm and vascular disease. A vagal neuropathy underlines neoplastic and autoimmune processes as well as metabolic syndrome X. Low level electromagnetic fields by modulating porphyrin metabolism can induce cell death. Porphyrin induced increased NMDA transmission and free radical injury can contribute to neuronal degeneration. Free radicals can produce mitochondrial PT pore dysfunction. This can lead to cyto C leak and activation of the caspase cascade leading to apoptosis and cell death. Altered porphyrin metabolism has been described in Alzheimer’s disease. The increased porphyrin photo-oxidation generated free radicals mediated NMDA transmission can also contribute to epileptogenesis.

The protoporphyrins binding to mitochondrial benzodiazepine receptors can regulate brain function and cell death. Low level electromagnetic fields by modulating porphyrin metabolism can generate redox stress to regulate cell functions. The porphyrins can undergo photo-oxidation and auto-oxidation generating free radicals. The archaeal porphyrins can produce free radical injury. Free radicals produce NFKB activation, open the mitochondrial PT pore resulting in cell death, produce oncogene activation, activate NMDA receptor and GAD enzyme regulating neurotransmission and generates the Warburg phenotypes activating glycolysis and inhibiting TCA cycle/oxphos. Porphyrins have been related to schizophrenia, metabolic syndrome X, malignancy, systemic lupus erythematosis, multiple sclerosis and Alzheimer's diseases. Low level electromagnetic fields by modulating porphyrin metabolism can regulate cell membrane sodium potassium ATPase. The porphyrins can complex and intercalate with the cell membrane producing sodium potassium ATPase inhibition adding on to digoxin mediated inhibition. Porphyrins can complex with proteins and nucleic acid producing biophoton emission. Low level electromagnetic fields by modulating porphyrin metabolism can regulate DNA, RNA and protein structure and function. Porphyrins complexing with proteins can modulate protein structure and function. Porphyrins complexing with DNA and RNA can modulate transcription and translation. Low level electromagnetic fields by modulating porphyrin metabolism can regulate mitochondrial function, peripheral benzodiazepine receptor and steroidogenesis. The porphyrin especially protoporphyrins can bind to peripheral benzodiazepine receptors in the mitochondria and modulate its function, mitochondrial cholesterol transport and steroidogenesis. Peripheral benzodiazepine receptor modulation by protoporphyrins can regulate cell death, cell proliferation, immunity and neural functions. Low level electromagnetic fields by modulating porphyrin metabolism and inducing redox stress can regulate enzyme systems. The

porphyrin photo-oxidation generates free radicals which can modulate enzyme function. Redox stress modulated enzymes include pyruvate dehydrogenase, nitric oxide synthase, cystathione beta synthase and heme oxygenase. Free radicals can modulate mitochondrial PT pore function. Free radicals can modulate cell membrane function and inhibit sodium potassium ATPase activity. Thus the porphyrins are key regulatory molecules modulating all aspects of cell function. Low level of electromagnetic fields by modulating porphyrin metabolism can induce viroidal and HERV expression. There was an increase in free RNA indicating self replicating RNA viroids and free DNA indicating generation of viroid complementary DNA strands by archaeal reverse transcriptase activity. The actinides and porphyrins modulate RNA folding and catalyse its ribozymal action. Digoxin can cut and paste the viroidal strands by modulating RNA splicing generating RNA viroidal diversity. The viroids are evolutionarily escaped archaeal group I introns which have retrotransposition and self splicing qualities. Porphyrin photo-oxidation induced redox stress can produce HDAC inhibition. Archaeal pyruvate producing histone deacetylase inhibition and porphyrins intercalating with DNA can produce endogenous retroviral (HERV) reverse transcriptase and integrase expression. This can integrate the RNA viroidal complementary DNA into the noncoding region of eukaryotic noncoding DNA using HERV integrase as has been described for borna and ebola viruses. The archaea and viroids can also induce cellular porphyrin synthesis. Bacterial and viral infections can precipitate porphyria. Thus porphyrins can regulate genomic function. The increased expression of HERV RNA can result in acquired immunodeficiency syndrome, autoimmune disease, neuronal degenerations, schizophrenia and malignancy. Low level electromagnetic fields by modulating porphyrin metabolism and generating redox stress can produce immune activation. The porphyrin photooxidation can generate free radicals which can activate NFKB. This can produce immune

activation and cytokine mediated injury. The increase in archaeal porphyrins can lead to autoimmune disease like SLE and MS. A hereditary form of MS and SLE related to altered porphyrin metabolism has been described. The protoporphyrins binding to mitochondrial benzodiazepine receptors can modulate immune function. Porphyrins can combine with proteins oxidizing their tyrosine, tryptophan, cysteine and histidine residues producing crosslinking and altering protein conformation and function. Porphyrins can complex with DNA and RNA modulating their structure. Porphyrin complexed with proteins and nucleic acids are antigenic and can lead onto autoimmune disease. Low level electromagnetic fields by modulating porphyrin metabolism and inducing redox stress can produce insulin resistance. The porphyrin photooxidation mediated free radical injury can lead to insulin resistance and atherogenesis. Thus archaeal porphyrins can contribute to metabolic syndrome X. Glucose has got a negative effect upon ALA synthase activity. Therefore hyperglycemia may be reactive protective mechanism to increased archaeal porphyrin synthesis. The protoporphyrins binding to mitochondrial benzodiazepine receptors can modulate mitochondrial steroidogenesis and metabolism. Altered porphyrin metabolism has been described in the metabolic syndrome X. Porphyrias can lead onto vascular thrombosis. Low level electromagnetic fields by modulating porphyrin metabolism and inducing redox stress/heme deficiency can activate HIF alpha. The porphyrin photo-oxidation can generate free radicals inducing HIF alpha and producing oncogene activation. Heme deficiency can lead to activation of HIF alpha and oncogenesis. This can lead to oncogenesis. Hepatic porphyrias induced hepatocellular carcinoma. The protoporphyrins binding to mitochondrial benzodiazepine receptors can regulate cell proliferation. Low level electromagnetic fields by modulating porphyrin metabolism can regulate prion protein conformation. The porphyrin can combine with prion proteins modulating their conformation. This

leads to abnormal prion protein conformation and degradation. Archaeal porphyrins can contribute to prion disease. Low level electromagnetic fields by modulating porphyrin metabolism can produce redox stress and regulate HERV expression. The porphyrins can also intercalate with DNA producing HERV expression. The HERV particles generated can contribute to the retroviral state associated with androgyny. The porphyrins in the blood can combine with bacteria and viruses and the photo-oxidation generated free radicals can kill them. Low level electromagnetic fields by modulating porphyrin metabolism can lead to increase predilection for viral and bacterial infections. The archaeal porphyrins can modulate bacterial and viral infections. The archaeal porphyrins are regulatory molecules keeping other prokaryotes and viruses on check.

Thus the actinidic archaeal symbiosis results in neanderthalisation of the population and generation of androgyny. The actinidic archaeal overgrowth and symbiosis is a consequence of global warming. Archaea are extremophiles and increase in density during periods of climate change. The actinidic archaeal catabolism of cholesterol generates digoxin and increased intracellular calcium resulting in formation of excess of gasotransmitters important in autonomic function of structures like the corpora cavernosa. The cholesterol catabolism results in depletion of cholesterol and to a state of lack of sex hormone synthesis. This produces an asexual state resulting in a social system of matriarchy related to androgyny. The actinidic archaeal cholesterol catabolism generates porphyrins producing the extrasensory quantal perceptive state associated with androgyny. This contributes to the creativity of the androgynous state. The porphyrin synthesis associated with androgyny also contributes to the disease states associated with it. This includes autoimmune disease, cancer, degenerations, acquired immunodeficiency syndrome, metabolic syndrome X and all civilisational disease.

References

[1] Weaver TD, Hublin JJ. Neandertal Birth Canal Shape and the Evolution of Human Childbirth. *Proc. Natl. Acad. Sci. USA* 2009; 106: 8151-8156.

[2] Kurup RA, Kurup PA. Endosymbiotic Actinidic Archaeal Mediated Warburg Phenotype Mediates Human Disease State. *Advances in Natural Science* 2012; 5(1): 81-84.

[3] Morgan E. The Neanderthal theory of autism, Asperger and ADHD; 2007, www.rdos.net/eng/asperger.htm.

[4] Graves P. New Models and Metaphors for the Neanderthal Debate. *Current Anthropology* 1991; 32(5): 513-541.

[5] Sawyer GJ, Maley B. Neanderthal Reconstructed. *The Anatomical Record Part B: The New Anatomist* 2005; 283B(1): 23-31.

[6] Bastir M, O'Higgins P, Rosas A. Facial Ontogeny in Neanderthals and Modern Humans. *Proc. Biol. Sci.* 2007; 274: 1125-1132.

[7] Neubauer S, Gunz P, Hublin JJ. Endocranial Shape Changes during Growth in Chimpanzees and Humans: A Morphometric Analysis of Unique and Shared Aspects. *J. Hum. Evol.* 2010; 59: 555-566.

[8] Courchesne E, Pierce K. Brain Overgrowth in Autism during a Critical Time in Development: Implications for Frontal Pyramidal Neuron and Interneuron Development and Connectivity. *Int. J. Dev. Neurosci.* 2005; 23: 153-170.

[9] Green RE, Krause J, Briggs AW, Maricic T, Stenzel U, Kircher M, Patterson N, Li H, Zhai W, *et al*. A Draft Sequence of the Neandertal Genome. *Science* 2010; 328: 710-722.

[10] Mithen SJ. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*; 2005, ISBN 0-297-64317-7.

[11] Bruner E, Manzi G, Arsuaga JL. Encephalization and Allometric Trajectories in the Genus Homo: Evidence from the Neandertal and Modern Lineages. *Proc. Natl. Acad. Sci. USA* 2003; 100: 15335-15340.

[12] Gooch S. *The Dream Culture of the Neanderthals: Guardians of the Ancient Wisdom.* Inner Traditions, Wildwood House, London; 2006.

[13] Gooch S. *The Neanderthal Legacy: Reawakening Our Genetic and Cultural Origins.* Inner Traditions, Wildwood House, London; 2008.

[14] Kurtén B. *Den Svarta Tigern*, ALBA Publishing, Stockholm, Sweden; 1978.

[15] Spikins P. Autism, the Integrations of 'Difference' and the Origins of Modern Human Behaviour. *Cambridge Archaeological Journal* 2009; 19(2): 179-201.

[16] Eswaran V, Harpending H, Rogers AR. Genomics Refutes an Exclusively African Origin of Humans. *Journal of Human Evolution* 2005; 49(1): 1-18.

Chapter 6

Archaeal Modulated Mirror Quantal Perceptive Neurons Mediate Consciousness and Functions as Quantal Observer

Introduction

The human endosymbiotic actinidic archaea catabolizes cholesterol and uses it for its energy metabolism. The ring oxidation of cholesterol generates pyruvate which enters the GABA shunt pathway resulting in the formation of succinyl CoA and glycine used for porphyrin synthesis. The side chain oxidation of cholesterol results in steroid synthesis and the generation of the steroidal glycoside digoxin which serves as an endogenous regulator of the sodium potassium pump inhibiting it. The archaea are magnetotactic and contain the dipolar porphyrins and magnetite. Digoxin by inhibiting the sodium potassium ATPase generates a pumped phonon system involving dipolar porphyrins and magnetite. This generates a Frohlich model of Bose-Einstein condensate at normal temperature resulting in quantal perception. The quantal perception can result in perceiving low level of EMF from the environment. This can generate conscious perception. The generation of porphyrins and digoxin in actinidic archaeal neurons was tested in disorders of consciousness schizophrenia and autism.[1-17]

The human brain can be considered as a modified archaeaon colony network. The archaeaon are eternal and can last for billions of years. The human brain is basically an information storage system. The archaeaon has got dipolar magnetite and porphyrins and can function as quantal computer. The archaeal colony with its dipolar magnetite and porphyrin in the setting of archaeal digoxin induced membrane sodium potassium ATPase inhibition can function as a pumped phonon system mediating quantal perception. The archaeaon in the brain is capable of information storage at a point in time and space. The experiences and information stored in the archaeaon is immortal and eternal. The archaeaon can have a wave particle existence and can exist in multiple quantal possible states and can inhabit multiple quantal multiverses. The interaction between information

stored in quantal computers in multiple different archaeaon systems all over the universe by the quantal interactions results in eternal existence of information in quantal multiverses. The information in the quantal multiverses can have a particulate existence creating a newer mode by quantal interactions between information stored at multiple points of time. This creates the particulate mythic world of human existence. These are what are called as Samsaras. The mind is uploaded into information in the neuronal archaeal colony network and its quantal computers. The information stored in the archaeal colony network mediated quantal state is eternal and can be considered as a digital version of the brain, a mind downloading technique or whole brain emulation. The archaeal colony network stores the human experiences in an eternal manner and can contribute to biological reincarnation.

Materials and Methods

Freshly diagnosed schizophrenia and autism based on DSM IV criteria were chosen for the study. Serum cytochrome 450, digoxin synthesis and porphyrin synthesis were studied. There were 10 patients in each group and each patient had an age and sex matched healthy control selected randomly from the general population. The blood samples were drawn in the fasting state before treatment was initiated. Plasma from fasting heparinised blood was used and the experimental protocol was as follows (I) Plasma+phosphate buffered saline, (II) same as I+cholesterol substrate, (III) same as II+cerium 0.1 mg/ml, (IV) same as II+ciprofloxacine and doxycycline each in a concentration of 1 mg/ml. Cholesterol substrate was prepared as described by Richmond. Aliquots were withdrawn at zero time immediately after mixing and after incubation at 37 ℃ for 1 hour. The following estimations were carried out: - Cytochrome F420, digoxin and ALA. Cytochrome F420 was estimated flourimetrically (excitation wavelength 420 nm and emission wavelength 520 nm).

Results

Plasma of control subjects showed increased levels of the above mentioned parameters with after incubation for 1 hour and addition of cholesterol substrate resulted in still further significant increase in these parameters. The plasma of patients showed similar results but the extent of increase was more. The addition of antibiotics to the control plasma caused a decrease in all the parameters while addition of cerium increased their levels. The addition of antibiotics to the patient's plasma caused a decrease in all the parameters while addition of cerium increased their levels but the extent of change was more in patient's sera as compared to controls. The results are expressed in tables 1-3 as percentage change in the parameters after 1 hour incubation as compared to the values at zero time.

Table 1. *Effect of cerium and antibiotics on cytochrome F420.*

Group	CYT F420 % (Increase with Cerium)		CYT F420 % (Decrease with Doxy+Cipro)	
	Mean	**± SD**	**Mean**	**± SD**
Normal	4.48	0.15	18.24	0.66
Schizo	23.24	2.01	58.72	7.08
Autism	21.68	1.90	57.93	9.64
F value	306.749		130.054	
P value	< 0.001		< 0.001	

Table 2. *Effect of cerium and antibiotics on digoxin.*

Group	Digoxin (ng/ml) (Increase with Cerium)		Digoxin (ng/ml) (Decrease with Doxy+Cipro)	
	Mean	**± SD**	**Mean**	**± SD**
Normal	0.11	0.00	0.054	0.003
Schizo	0.55	0.06	0.219	0.043
Autism	0.53	0.08	0.205	0.041
F value	135.116		71.706	
P value	< 0.001		< 0.001	

Table 3. *Effect of cerium and antibiotics on delta amino levulinic acid.*

Group	ALA % (Increase with Cerium)		ALA % (Decrease with Doxy+Cipro)	
	Mean	**± SD**	**Mean**	**± SD**
Normal	4.40	0.10	18.48	0.39
Schizo	22.52	1.90	66.39	4.20
Autism	23.20	1.57	66.65	4.26
F value	372.716		556.411	
P value	< 0.001		< 0.001	

Discussion

The study shows that the human endosymbiotic actinidic archaea catabolizes cholesterol and uses it for its energy metabolism. The ring oxidation of cholesterol generates pyruvate which enters the GABA shunt pathway resulting in the formation of succinyl CoA and glycine used for porphyrin synthesis. The side chain oxidation of cholesterol results in steroid synthesis and the generation of the steroidal glycoside digoxin which serves as an endogenous regulator of the sodium potassium pump inhibiting it. The archaea are magnetotactic and contain the dipolar porphyrins and magnetite. Digoxin by inhibiting the sodium potassium ATPase generates a pumped phonon system involving dipolar porphyrins and magnetite. This generates a Frohlich model of Bose-Einstein condensate at normal temperature resulting in quantal perception. The quantal perception can result in perceiving low level of EMF from the environment. This can generate conscious perception. The generation of porphyrins and digoxin in actinidic archaeal neurons was tested in disorders of consciousness schizophrenia and autism.

Consciousness involves quantal perception. The wave nature of the quantal state becomes particulate when it is observed by an observer. Consciousness involves the sum total of quantal perception by the brain resulting in the observer state. The observer and observed have an inter-related existence. Thus the

observer and observed comes into existence due to the quantal perceptive state of the actinidic archaeal mirror neurons. The quantal state is mediated by archaeal digoxin and the dipolar magnetite and porphyrins. Consciousness involves working memory, perceptual synchronisation and focussed attention. Focussed attention depends on magnetotactic or quantal low level of EMF perception from the world and its objects. The perceptual synchronisation depends on the phenomena of cross activation of neuronal systems due to quantal phenomena. This can also generate the phenomena of synaesthesia and synkinesia. Working memory depends upon quantal perceptive mechanisms mediated by magnetotactic actinidic archaeal neurons in the brain generating reverberatory circuits. Thus actinidic archaeal induced mirror neurons in the prefrontal cortex and cerebellum are quantal perceptive neurons. The cerebellum is more concerned with intuition and extrasensory perception. The cerebellar neurons may be predominantly actinidic archaeal induced quantal perceptive mirror neurons. Quantal perceptive actinidic archaeal induced magnetotactic mirror neurons may be more dense in the cerebellum than prefrontal cortex and the cerebellar cortical circuits may play a major role in consciousness. Quantal perceptive mirror neurons fire in response to low level of EMF from the observed world. This quantal perceptive mirror neuron function in the cerebellum and to a lesser extent in the prefrontal cortex generates the observer as such and the observed world also by the act of observation. The world as such exists on the basis of magnetotactic archaeal mediated quantal mirror neuron function generating the observed-observer relation. Thus consciousness is a function of actinidic archaeal induced quantal perceptive mirror neurons in the cerebellum and to some extent in the prefrontal cortex.

Schizophrenia and autism are both disorders of consciousness. The actinidic archaeal induced quantal perceptive mirror neuron function is hyperactive in both disorders. This results in dysfunction of consciousness due to increase in actinidic

archaeal density, digoxin synthesis and porphyrin synthesis. Perception occurs predominantly by quantal perceptive mechanism in schizophrenia and autism. This also leads to increased creativity and intuition in schizophrenia and autism. Thus the observer and observed depends on actinidic archaeal induced quantal perceptive mirror neuron function. The world as such is an illusion created by the inter-relationship between the observed and observer mediated by quantal perceptive mirror neurons. The quantal perceptive image of the world and the observer can exist as multiple possibilities in multiple universes leading to the phenomena of eternal existence in multiverse universes.

The archaeal porphyrins can modulate amyloid formation and modulate systemic disease process. The archaeal cholesterol oxidase activity was increased resulting in generation of pyruvate and hydrogen peroxide. The pyruvate gets converted to glutamate and ammonia by the GABA shunt pathway. The pyruvate is converted to glutamate by serum glutamate pyruvate transaminase. The glutamate gets acted upon by glutamate dehydrogenase to generate alpha ketoglutarate and ammonia. Alanine is most commonly produced by the reductive amination of pyruvate via alanine transaminase. This reversible reaction involves the interconversion of alanine and pyruvate, coupled to the interconversion of alpha-ketoglutarate (2-oxoglutarate) and glutamate. Alanine can contribute to glycine. Glutamate is acted upon by Glutamic acid decarboxylase to generate GABA. GABA is converted to succinic semialdehyde by GABA transaminase. Succinic semialdehyde is converted to succinic acid by succinic semialdehyde dehydrogenase. Glycine combines with succinyl CoA to generate delta aminolevulinic acid catalysed by the enzyme ALA synthase. There was upregulated archaeal porphyrin synthesis in the patient population which was archaeal in origin as indicated by actinide catalysis of the reactions. The cholesterol oxidase pathway generated pyruvate which entered the GABA shunt pathway. This resulted in synthesis of succinate and glycine which are

substrates for ALA synthase. The archaea can undergo magnetite and calcium carbonate mineralization and can exist as calcified nanoforms. The possibility of Warburg phenotype induced by actinide based primitive organism like archaea with a mevalonate pathway and cholesterol catabolism was considered in this paper. The Warburg phenotype results in inhibition of pyruvate dehydrogenase and the TCA cycle. The pyruvate enters the GABA shunt pathway where it is converted to succinyl CoA. The glycolytic pathway is upregulated and the glycolytic metabolite phosphoglycerate is converted to serine and glycine. Glycine and succinyl CoA are the substrates for ALA synthesis. The archaea and viroids can regulate the nervous system including the NMDA / GABA thalamo-cortico-thalamic pathway mediating conscious perception. Porphyrin photo-oxidation can generate free radicals which can modulate NMDA transmission. Free radicals can increase NMDA transmission. Free radicals can induce GAD and increase GABA synthesis. ALA blocks GABA transmission and upregulates NMDA. Protoporphyrins bind to GABA receptor and promote GABA transmission. Thus porphyrins can modulate the thalamo-cortico-thalamic pathway of conscious perception. The dipolar porphyrins, PAH and archaeal magnetite in the setting of digoxin induced sodium potassium ATPase inhibition can produce a pumped phonon system mediated Frohlich model superconducting state inducing quantal perception with nanoarchaeal sensed gravity producing the orchestrated reduction of the quantal possibilities to the macroscopic world. ALA can produce sodium potassium ATPase inhibition resulting in a pumped phonon system mediated quantal state involving dipolar porphyrins. Porphyrin molecules have a wave particle existence and can bridge the dividing line between quantal state and particulate state. Thus the porphyrins can mediate conscious and quantal perception. Porphyrins binding to proteins, nucleic acids and cell membranes can produce biophoton emission. Porphyrins by autooxidation can generate

biophotons and are involved in quantal perception. Biophotons can mediate quantal perception. Cellular porphyrins photooxidation are involved in sensing of earth magnetic fields and low level biomagnetic fields. Thus prophyrins can mediate extrasensory perception. The porphyrins can modulate hemispheric dominance. There is increased porphyrin synthesis and right hemispherical chemical dominance and decreased porphyrin synthesis in left hemispherical chemical dominance. The increase in archaeal porphyrins can contribute to the pathogenesis of schizophrenia and autism. Porphyria can lead to psychiatric disorders and seizures. Altered porphyrin metabolism has been described in autism. Porphyrin by modulating conscious and quantal perception is involved in the pathogenesis of schizophrenia and autism. It also plays a role in the genesis of consciousness.

References

[1] Weaver TD, Hublin JJ. Neandertal Birth Canal Shape and the Evolution of Human Childbirth. *Proc. Natl. Acad. Sci. USA* 2009; 106: 8151-8156.

[2] Kurup RA, Kurup PA. Endosymbiotic Actinidic Archaeal Mediated Warburg Phenotype Mediates Human Disease State. *Advances in Natural Science* 2012; 5(1): 81-84.

[3] Morgan E. The Neanderthal theory of autism, Asperger and ADHD; 2007, www.rdos.net/eng/asperger.htm.

[4] Graves P. New Models and Metaphors for the Neanderthal Debate. *Current Anthropology* 1991; 32(5): 513-541.

[5] Sawyer GJ, Maley B. Neanderthal Reconstructed. *The Anatomical Record Part B: The New Anatomist* 2005; 283B(1): 23-31.

[6] Bastir M, O'Higgins P, Rosas A. Facial Ontogeny in Neanderthals and Modern Humans. *Proc. Biol. Sci.* 2007; 274: 1125-1132.

[7] Neubauer S, Gunz P, Hublin JJ. Endocranial Shape Changes during Growth in Chimpanzees and Humans: A Morphometric Analysis of Unique and Shared Aspects. *J. Hum. Evol.* 2010; 59: 555-566.

[8] Courchesne E, Pierce K. Brain Overgrowth in Autism during a Critical Time in Development: Implications for Frontal Pyramidal Neuron and Interneuron Development and Connectivity. *Int. J. Dev. Neurosci.* 2005; 23: 153-170.

[9] Green RE, Krause J, Briggs AW, Maricic T, Stenzel U, Kircher M, Patterson N, Li H, Zhai W, *et al*. A Draft Sequence of the Neandertal Genome. *Science* 2010; 328: 710-722.

[10] Mithen SJ. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*; 2005, ISBN 0-297-64317-7.

[11] Bruner E, Manzi G, Arsuaga JL. Encephalization and Allometric Trajectories in the Genus Homo: Evidence from the Neandertal and Modern Lineages. *Proc. Natl. Acad. Sci. USA* 2003; 100: 15335-15340.

[12] Gooch S. *The Dream Culture of the Neanderthals: Guardians of the Ancient Wisdom.* Inner Traditions, Wildwood House, London; 2006.

[13] Gooch S. *The Neanderthal Legacy: Reawakening Our Genetic and Cultural Origins.* Inner Traditions, Wildwood House, London; 2008.

[14] Kurtén B. *Den Svarta Tigern*, ALBA Publishing, Stockholm, Sweden; 1978.

[15] Spikins P. Autism, the Integrations of 'Difference' and the Origins of Modern Human Behaviour. *Cambridge Archaeological Journal* 2009; 19(2): 179-201.

[16] Eswaran V, Harpending H, Rogers AR. Genomics Refutes an Exclusively African Origin of Humans. *Journal of Human Evolution* 2005; 49(1): 1-18.

[17] Ramachandran V. S. The Reith lectures, BBC London. 2012.

Chapter 7

The Archaeal Induced Stem Cell Conversion Produces Autistic, Spiritual, Surrealistic Evil Brain

Introduction

The global warming produces increased acidity and atmospheric carbon dioxide resulting in extremophilic archaeal symbiosis in humans. The archaeal symbiosis results in neanderthalisation of humans. The archaea induced uncoupling proteins producing the primitive Warburg phenotype and stem cell metabolonomics. The archaeal metabolites of cholesterol digoxin, bile acids and short chain fatty acids induce uncoupling proteins. The lysosomal enzymes a marker of stem cell conversion are markedly increased along with genesis of the archaeal phenotype in metabolic syndrome X, degenerations, autoimmune diseases, cancer, schizophrenia and autism. In all these systemic diseases there is somatic cell transformation to stem cell and lose of function. The neurons become immature and lose their dendritic spines and connectivity. This results in loss of neuronal function and reversion to archaeal magnetite mediated extrasensory perception of low level of EMF. Exposure to low level of EMF results in brain changes. This results in prefrontal cortex atrophy. The primitive brain areas of cerebellum and brain stem become hypertrophic. The somatic and neuronal cell proliferates and there is neanderthalisation of the brain and body.[1-17]

The idea of goodness is based on reason and logic. Reason judgment and logic is a function of the cerebral cortex especially the prefrontal lobe. Prefrontal lobe function needs dynamic synaptic connectivity which is produced by jumping genes mediated by human endogenous retroviral sequences. Goodness is correlated with heaven. The idea of evil is based on the unconscious and the impulsive behavior related to subcortical areas especially the cerebellum. The cerebellum is the site of impulsive behavior and the unconscious behavior. The cerebellar and subcortical brain connections are predominantly archaeal colony networks. The idea of evil is related to hell. The idea of conscious judgmental acts and unconscious impulsive acts, heaven and

hell, goodness and evil are juxtapositions. The global warming and exposure to low level of EMF leads to actinidic archaeal growth in the brain and increased archaeal magnetite mediated perception of low level of EMF. This leads to prefrontal cortex atrophy and cerebellar dominance. The conscious becomes minimal and unconscious brain takes over. The study assessed archaeal growth as assessed by cytochrome F420 activity and stem cell type metabolonomics in systemic diseases, neuropsychiatric disorders and normal individuals with differing psychological profile - prisoners, creative individuals and common sense modulated business men. The results are presented in this paper.[1-17]

Materials and Methods

The blood samples were drawn from four groups of psychological different population spiritually inclined, criminal prisoners, creative artists and business men. There were 15 members in each group. The blood samples were also drawn from 15 cases each of metabolic syndrome, degenerations - Alzheimer's disease, autoimmune disease - SLE, cancer - brain glioma, schizophrenia and autism. The estimations done in the blood samples collected include cytochrome F420 activity. Blood lactate, pyruvate, hexokinase, cytochrome C, cytochrome F420, digoxin, bile acids, butyrate and propionate were estimated.

Results

The results showed that the spiritual, artistic creative individuals and criminal prisoners had increased cytochrome F420 activity and RBC digoxin levels. The results showed that the businessmen had decreased cytochrome F420 activity and RBC digoxin levels. The blood samples of Alzheimer's disease, autoimmune disease - SLE, cancer - brain glioma, schizophrenia and autism had increased blood lactate and pyruvate, increased RBC hexokinase, increased serum cytochrome C and serum cytochrome F420, increased serum digoxin,

bile acids, butyrate and propionate. The disease state had increased cytochrome F420 activity. The serum cytochrome C levels in the blood were increased. This suggested mitochondrial dysfunction. There was an increased in glycolysis as suggested by increased RBC hexokinase activity and lactic acidosis. Owing to the mitochondrial dysfunction and pyruvate dehydrogenase inhibition there was pyruvate accumulation. The pyruvate was converted to lactate by the Cori cycle and also to glutamate and ammonia. This metabolism is suggestive of the Warburg phenotype and stem cell conversion. The stem cells depend on Warburg anaerobic glycolysis for energetics and have a mitochondrial dysfunction. The lysosomal enzyme beta galactosidase activity was increased in the disease group and in creative artists and criminals suggesting stem cell conversion. This suggests that artistic creative, criminal prisoners as well as spiritual individuals tend to have stem cell metabolonomics and stem cell conversion.

Table 1

Group	Cytochrome F420		Serum Cyto C (ng/ml)		Lactate (mg/dl)		Pyruvate (umol/l)		RBC Hexokinase (ug glu phos / hr/mgpro)	
	Mean	± SD	Mean	± SD	Mean	± SD	Mean	± SD	Mean	± SD
Normal population	1.00	0.00	2.79	0.28	7.38	0.31	40.51	1.42	1.66	0.45
Spiritual	4.00	0.00	12.39	1.23	25.99	8.10	100.51	12.32	5.46	2.83
Acquisitive capitalist	0.00	0.00	1.21	0.38	2.75	0.41	23.79	2.51	0.68	0.23
Artistic	4.00	0.00	12.84	0.74	23.64	1.43	96.19	12.15	10.12	1.75
Criminality	4.00	0.00	12.72	0.92	25.35	5.52	103.32	13.04	9.44	3.40
Schizo	4.00	0.00	11.58	0.90	22.07	1.06	96.54	9.96	7.69	3.40
Seizure	4.00	0.00	12.06	1.09	21.78	0.58	90.46	8.30	6.29	1.73
HD	4.00	0.00	12.65	1.06	24.28	1.69	95.44	12.04	9.30	3.98
AD	4.00	0.00	11.94	0.86	22.04	0.64	97.26	8.26	8.46	3.63
MS	4.00	0.00	11.81	0.67	23.32	1.10	102.48	13.20	8.56	4.75
SLE	4.00	0.00	11.73	0.56	23.06	1.49	100.51	9.79	8.02	3.01
NHL	4.00	0.00	11.91	0.49	22.83	1.24	95.81	12.18	7.41	4.22
Glio	4.00	0.00	13.00	0.42	22.20	0.85	96.58	8.75	7.82	3.51
DM	4.00	0.00	12.95	0.56	25.56	7.93	96.30	10.33	7.05	1.86
CAD	4.00	0.00	11.51	0.47	22.83	0.82	97.29	12.45	8.88	3.09
CVA	4.00	0.00	12.74	0.80	23.03	1.26	103.25	9.49	7.87	2.72
AIDS	4.00	0.00	12.29	0.89	24.87	4.14	95.55	7.20	9.84	2.43
CJD	4.00	0.00	12.19	1.22	23.02	1.61	96.50	5.93	8.81	4.26
Autism	4.00	0.00	12.48	0.79	21.95	0.65	92.71	8.43	6.95	2.02
DS	4.00	0.00	12.79	1.15	23.69	2.19	91.81	4.12	8.68	2.60
Cerebral Palsy	4.00	0.00	12.14	1.30	23.12	1.81	95.33	11.78	7.92	3.32
CRF	4.00	0.00	12.66	1.01	23.42	1.20	97.38	10.76	7.75	3.08
Cirr/Hep Fail	4.00	0.00	12.81	0.90	26.20	5.29	97.77	13.24	8.99	3.27
Low level background radiation	4.00	0.00	12.26	1.00	23.31	1.46	103.28	11.47	7.58	3.09
F value	0.001		445.772		162.945		154.701		18.187	
P value	< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	

Table 2

Group	ACOA (mg/dl)		Glutamate (mg/dl)		Se. Ammonia (ug/dl)		RBC Digoxin (ng/ml RBC Susp)		Beta galactosidase activity in serum (IU/ml)	
	Mean	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**	**Mean**	**± SD**
Normal population	8.75	0.38	0.65	0.03	50.60	1.42	0.58	0.07	17.75	0.72
Spiritual	2.51	0.36	3.19	0.32	93.43	4.85	1.41	0.23	55.17	5.85
Acquisitive capitalist	16.49	0.89	0.16	0.02	23.92	3.38	0.18	0.05	8.70	0.90
Artistic	2.51	0.42	3.11	0.36	92.40	4.34	1.40	0.32	46.37	4.87
Criminality	2.19	0.19	3.27	0.39	95.37	5.76	1.51	0.29	47.47	4.34
Schizo	2.51	0.57	3.41	0.41	94.72	3.28	1.38	0.26	51.17	3.65
Seizure	2.15	0.22	3.67	0.38	95.61	7.88	1.23	0.26	50.04	3.91
HD	1.95	0.06	3.14	0.32	94.60	8.52	1.34	0.31	51.16	7.78
AD	2.19	0.15	3.53	0.39	95.37	4.66	1.10	0.08	51.56	3.69
MS	2.03	0.09	3.58	0.36	93.42	3.69	1.21	0.21	47.90	6.99
SLE	2.54	0.38	3.37	0.38	101.18	17.06	1.50	0.33	48.20	5.53
NHL	2.30	0.26	3.48	0.46	91.62	3.24	1.26	0.23	51.08	5.24
Glio	2.34	0.43	3.28	0.39	93.20	4.46	1.27	0.24	51.57	2.66
DM	2.17	0.40	3.53	0.44	93.38	7.76	1.35	0.26	51.98	5.05
CAD	2.37	0.44	3.61	0.28	93.93	4.86	1.22	0.16	50.00	5.91
CVA	2.25	0.44	3.31	0.43	103.18	27.27	1.33	0.27	51.06	4.83
AIDS	2.11	0.19	3.45	0.49	92.47	3.97	1.31	0.24	50.15	6.96
CJD	2.10	0.27	3.94	0.22	93.13	5.79	1.48	0.27	49.85	6.40
Autism	2.42	0.41	3.30	0.32	94.01	5.00	1.19	0.24	52.87	7.04
DS	2.01	0.08	3.30	0.48	98.81	15.65	1.34	0.25	47.28	3.55
Cerebral Palsy	2.06	0.35	3.24	0.34	92.09	3.21	1.44	0.19	53.49	4.15
CRF	2.24	0.32	3.26	0.43	98.76	11.12	1.26	0.26	49.39	5.51
Cirr/Hep Fail	2.13	0.17	3.25	0.40	94.77	2.86	1.50	0.20	46.82	4.73
Low level background radiation	2.14	0.19	3.47	0.37	102.62	26.54	1.41	0.30	51.01	4.77
F value	1871.04		200.702		61.645		60.288		194.418	
P value	< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	

Discussion

The systemic diseases and neuropsychiatric disorders tend to have a predominant anaerobic glycolytic metabolism and mitochondrial oxidative phosphorylation is suppressed. The metabolism is similar to the metabolism of the stem cell. The pyruvate and lactate levels are increased with a decrease in acetyl coenzyme A and ATP. The glycolytic pathway and hexokinase is increased. This indicates a Warburg phenotype depending upon anaerobic glycolysis for energetics. The lysosomal enzymes beta galactosidase a stem cell marker is increased. The cytochrome F420 is also increased as well as the archaeal catabolite digoxin which suppresses sodium potassium ATPase. Bacteria and archaea are supposed to induce stem cell transformation. The induction of uncoupling proteins leads to stem cell transformation. The uncoupling proteins inhibit oxidative phosphorylation and the substrates are directed to anaerobic glycolysis. Digoxin by inhibiting sodium potassium ATPase can increase intracellular calcium, induce mitochondrial permeability transient pore function and uncouple oxidative phosphorylation. The side chain of cholesterol is catabolized by archaea to butyric acid and propionic acid which uncouple oxidative phosphorylation. The archaeal side chain hydroxylase convert cholesterol to bile acids which uncouple oxidative phosphorylation. Thus archaeal symbiosis in the cell results in cholesterol catabolism and the catabolites digoxin, bile acids and short chain fatty acids uncouple oxidative phosphorylation, inhibit mitochondrial function and promote anaerobic glycolysis. The conversion of somatic cells to stem cell helps in archaeal persistence within the cell and symbiosis. Mycobacterium leprae infection can convert Schwann cells to stem cells. Archaeal infection produces somatic cell conversion to stem cells for archaeal persistence. The conversion to stem cell results in proliferation and loss of function resulting in systemic disease and

neuropsychiatric disorders. Stem cell conversion of neurons and loss of function results in development of a new psychological phenotype.[1-17]

The systemic and neuronal cell in metabolic syndrome X, cancer, autoimmune disease, degenerations, schizophrenia and autism behaves like the stem cell. It is plausible to hypothesize a somatic cell conversion to stem cell in these disorders. The differentiated cells by archaeal induction get converted to stem cell. The stem cell is an immature cell with loss of function. The neurons lose their dendritic spines and loss of connectivity. The brain function becomes primitive. The neurons are adendritic and disconnected. This results in complex brain structures like the modern cerebral cortex and prefrontal cortex atrophy. The primitive parts of the brain the brain stem and cerebellum hypertrophies. This results in neanderthalisation of the brain with a prominent occipital bun and atrophied prefrontal cortex. The prefrontal cortex atrophy results in loss of logic, judgment, reasoning and executive functions. The hypertrophy of the cerebellum and brain stem results in dominance of impulsive behavior. The difference between reality and dreams is lost. The brain is ruled by the senses and impulses. The brain becomes dysfunctional with more of violent, aggressive and cannibalistic behavior. The art becomes more abstract and related to the unconscious. The world of the unconscious brain with its archetypes takes over. There is loss of the world of reasoning, logic and judgment. It is a world of impulsiveness in which primitive tendencies with relation to the unconscious becomes dominant. This produces more of ritualized behavior, violent and aggressive tendencies, terrorism, war, sexual obscenities and alternate sexuality. It is a world of the senses. It is also intensely evil as well as spiritual. The inhibition of the conscious due to loss of cortical functions and the dominance of the unconscious leads to mystical experience. There is a overflowing of spirituality. The paradoxical side of this behavior also dominates. The violence, aggression, obsessive sexuality, magic realism in literature,

abstract painting, rock music and dance and modern poetry as well as literature produces trancedence of a different kind. This results in surrealism and syntheism. The loss of function of the neurons results in schizophrenia, autism and degenerations. The increased archaeal induced proliferation of stem cells results in a big sized brain and trunk as in Neanderthals. This archaeal symbiosis produces neanderthalisation and a stem cell syndrome. This produces reverse aging which can be called as an epidemic Benjamin Button syndrome. The lymphocytic stem cells have uncontrolled proliferation and results in autoimmune diseases. The stem cell proliferation results in oncogenesis. The stem cell metabolonomics with inhibited mitochondrial function and anaerobic glycolysis results in metabolic syndrome X. Stem cell markers are increased in schizophrenia and autism and the neurons lack dendritic spines. Stem cell markers are also increased in autoimmune disease. The diabetic metabolism is akin to stem cell metabolism. The cancer cell behaves like the stem cell.[1-17]

In the metaphysics of evil the unconscious dominates and the behavior is impulsive dictated by primitive thoughts. The unconscious modulated by the cerebellum is responsible for automatic acts producing what is called as psychic automatism. The unconscious parallels what Jung described as the archetypes of the collective unconscious. The metaphysics of evil leads to a syntheistic brain with the dominance of the willpower. The primitive archetypes produce concepts of abstract painting, psychedelic music and dance and postmodern literature or magical realism. All these are modes of connecting with the unconscious. The unconscious produces primitive selfish tendencies leading to individualism and capitalism. The unconscious helps to transcend taboos and creates the surrealistic world. The collective unconscious also produces a sense of spirituality and oneness. It is an impulsive brain with fixations and primitive obsessions. There is cerebellar psychic automatism. This leads to ritualized behaviours. The dominance of the collective unconscious results in ritualized

behaviors characteristic of religious worship. The collective unconscious also leads to the creation of obscene art and literature as well as violence which is a form of trancedence. Coprolalic religious ritual ceremonies had been described in some parts of the world. Terrorism and acts of violence are also a type of trancedence. The same phenomena occur in ritual sacrifices in religion, the violence of war and the acquisitiveness of capitalism. The primitive unconscious leads to the will to power. This produces greedy capitalism, dictatorship and fascism. The will to power results in worship of the powerful. It is an individualistic, anarchic, selfish world. The cerebellar world is the primitive world of archetypes in the collective unconscious. The abstract paintings have links with the collective unconscious. The rock music or modern music contains rhythmic primitive chaotic sounds coming out the collective unconscious. The primitive collective unconscious links up post modern literature or magic realism with violence, love, hate, evil, obscenities and death. Thus literature, music, dance and painting helps to overcome reality and rationality producing trancedence. The unconscious brain is formed of an archaeal colony network and is adynamic and inflexible. There is an epidemic of autism and schizophrenia. The loss of function of neurons leads to increased extrasensory perception via archaeal magnetite. This can lead to the lack of development of speech and ritualized behaviours of autism. This also produces the thought disorder, hallucinations and delusions of schizophrenia. It looks like an epidemic cerebellar cognitive, affective disorder.[1-17]

The goodness is related to conscious brain localized in the cortical areas. The cortical areas mediate moralistic, functionally atheistic, civil society behavior. The civil society depends upon common good. The cortical world is a world of morality, rationality, altruism, civility and decencies. This needs inhibitory power of the cerebral cortex. Such a society is non-capitalistic and works for the common good. It tends to be non creative. The primitive collective spirituality

and oneness is lost. It is replaced by goodness based on judgment, reasoning and morality. It is a moralistic world where taboos are banned. This requires synaptic plasticity and is modulated by HERV mediated jumping genes. This needs a dynamic brain and the human cerebral cortex evolved due to the jumping genes generated from human endogenous retroviral sequences. The cerebellar world comparatively is impulsive, criminal, violent, terroristic with love of war, selfish, acquisitive, spiritual, autistic, obsessive, schizophrenic, obscene, evil, ritualized, artistic, illogical and cruel. It is mediated by the archaeal colony network. The stem cell transformation of somatic cells results in HERV resistance and retroviral resistance. Archaeal digoxin inhibits reverse transcriptase by producing magnesium deficiency as well as modulates RNA viral editing inhibiting retroviral replication. This produces lack of HERV jumping genes in this stem cell brain and lack of synaptic plasticity and dynamicity. The stem cell syndrome is characterized by retroviral resistance. Archaeal symbiosis inhibits retroviral infection. The homo sapiens with less of archaeal symbiosis becomes susceptible to retroviral and other RNA viral infection and gets wiped out. The homo neoneanderthalis are resistance to retroviral and other RNA viral infection and persists. The homo neoneanderthalis dominates all over the world. But the homo neoneanderthalis are prone to civilisational disease like malignancy, autoimmune disease, neurodegeneration, metabolic syndrome and neuropsychiatric disorders. The homo neoneanderthalis becomes extinct after a period of time.[1-17]

The archaeal induced stem cell syndrome or neanderthalisation is due to global warming and acid rains resulting in increased extremophilic archaeal symbiosis. The archaea catabolizes cholesterol and generates digoxin, bile acids and short chain fatty acids which produce induction of uncoupling proteins. This produces mitochondrial dysfunction and the cell obtains its energetics from glycolysis. Archaeal digoxin produces membrane sodium potassium ATPase

inhibition which also contributes to stem cell conversion. The whole body somatic and brain undergoes stem cell conversion and becomes a stem cell phenotype with Warburg metabolic phenotype. The generalized acidity due to global warming and increased atmospheric carbon dioxide also facilitates archaeal growth and stem cell transformation. The acidic pH due to the Warburg phenotype and increased atmospheric carbon dioxide also results in stem cell conversion. The somatic differentiated cell getting converted to stem cells lose their function and become dysfunctional metabolically, neurologically, immunologically and endocrine-wise. This produces the epidemic Benjamin button syndrome and the human species becomes neanderthalic and a collection of immature stem cells. This results in epidemic metabolic syndrome X, degenerations, cancer, autoimmune disease, autism and schizophrenia. The brain becomes converted to a collection of stem cells which are dedifferentiated with loss of function and is like an archaeal colony network. The perception becomes extrasensory and quantal depending on archaeal magnetite. The increased amount of low level EMF perception results in prefrontal cortical atrophy. It also produces cerebellar hypertrophy and the cerebellar cognitive function takes over. This also results in societal changes where evil and spirituality dominates. The world of the logical civil society of the Christian world comes to end and paganistic behavior takes over. The society becomes selfish and dominated by impulsive consumerism and acquisitive capitalism. The world becomes cruel, violent, aggressive and terroristic. Art becomes chaotic and abstract in line with the senses and unconscious. There is a predominance of obsessive and alternate sexuality. Criminal behavior and cruelty dominates. The world is impulsive psychopathic, creative autistic with features of idiotic savants, ritualistic, chaotic, sexual, ugly, anarchic, violent, evil, paganistic, obscene, atheistically spiritual as well as selfish. It mimics the Niezteschean world, the deconstructed world of Derrida, the surrealistic world

of Bataille and the nihilistic, anarchic world. There is the death of the individual and life becomes a social value. It is an acephalistic world of Freud and Jung. The art is abstract, the literature is magically real, the music is rock and the dance chaotic. All these result from the extinction of rationality and the dominance of primitive impulsive behavior. A civilization of the senses dominated by the unconscious takes over. The will to goodness given by the cerebral cortex is lost. This results in development of a new homo neoneanderthal human species with its dominant evilly spiritual cerebellar brain. It produces a surrealistic evil brain with realm of the senses, archetypes, evil spirituality and impulsiveness taking over. It is a kingdom of the collective unconscious and selfish capitalism with the will to power and the realm of the senses.[1-17]

References

[1] Weaver TD, Hublin JJ. Neandertal Birth Canal Shape and the Evolution of Human Childbirth. *Proc. Natl. Acad. Sci. USA* 2009; 106: 8151-8156.

[2] Kurup RA, Kurup PA. Endosymbiotic Actinidic Archaeal Mediated Warburg Phenotype Mediates Human Disease State. *Advances in Natural Science* 2012; 5(1): 81-84.

[3] Morgan E. The Neanderthal theory of autism, Asperger and ADHD; 2007, www.rdos.net/eng/asperger.htm.

[4] Graves P. New Models and Metaphors for the Neanderthal Debate. *Current Anthropology* 1991; 32(5): 513-541.

[5] Sawyer GJ, Maley B. Neanderthal Reconstructed. *The Anatomical Record Part B: The New Anatomist* 2005; 283B(1): 23-31.

[6] Bastir M, O'Higgins P, Rosas A. Facial Ontogeny in Neanderthals and Modern Humans. *Proc. Biol. Sci.* 2007; 274: 1125-1132.

[7] Neubauer S, Gunz P, Hublin JJ. Endocranial Shape Changes during Growth in Chimpanzees and Humans: A Morphometric Analysis of Unique and Shared Aspects. *J. Hum. Evol.* 2010; 59: 555-566.

[8] Courchesne E, Pierce K. Brain Overgrowth in Autism during a Critical Time in Development: Implications for Frontal Pyramidal Neuron and Interneuron Development and Connectivity. *Int. J. Dev. Neurosci*. 2005; 23: 153-170.

[9] Green RE, Krause J, Briggs AW, Maricic T, Stenzel U, Kircher M, Patterson N, Li H, Zhai W, *et al*. A Draft Sequence of the Neandertal Genome. *Science* 2010; 328: 710-722.

[10] Mithen SJ. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*; 2005, ISBN 0-297-64317-7.

[11] Bruner E, Manzi G, Arsuaga JL. Encephalization and Allometric Trajectories in the Genus Homo: Evidence from the Neandertal and Modern Lineages. *Proc. Natl. Acad. Sci. USA* 2003; 100: 15335-15340.

[12] Gooch S. *The Dream Culture of the Neanderthals: Guardians of the Ancient Wisdom.* Inner Traditions, Wildwood House, London; 2006.

[13] Gooch S. *The Neanderthal Legacy: Reawakening Our Genetic and Cultural Origins.* Inner Traditions, Wildwood House, London; 2008.

[14] Kurtén B. *Den Svarta Tigern*, ALBA Publishing, Stockholm, Sweden; 1978.

[15] Spikins P. Autism, the Integrations of 'Difference' and the Origins of Modern Human Behaviour. *Cambridge Archaeological Journal* 2009; 19(2): 179-201.

[16] Eswaran V, Harpending H, Rogers AR. Genomics Refutes an Exclusively African Origin of Humans. *Journal of Human Evolution* 2005; 49(1): 1-18.

[17] Ramachandran V. S. The Reith lectures, BBC London. 2012.

GLOBAL WARMING

and Symbiotic Evolution of Species

Archaea and Viroid Induced Symbiotic Human Evolution and the Fructosoid Organelle

Archaea and Viroid Induced Symbiotic Human Evolution and Hemispheric Dominance

Archaea and Viroid Induced Symbiotic Human Evolution - Vitaminocyte Organelle and Brain Evolution

Archaea and Viroid Induced Symbiotic Human Evolution and the Steroidelle - The Isoprenoid Cholesterol Organism

Archaea and Viroid Induced Symbiotic Human Evolution - Retrovirus, Prions and Viroids - Porphyrinoids and Viroidelle

Archaea and Viroid Induced Symbiotic Human Evolution and Shikimate Pathway - The Neuronal Neurotransminoids

Archaea and Viroid Induced Symbiotic Human Evolution - Human Family and Social Bonding - Archaeal RNA Viroidal Quasi-Species Consortia and Human Social Identity

Archaea and Viroid Induced Symbiotic Human Evolution - Human Creativity and Autistic Psychopath Syndrome

Archaea and Viroid Induced Symbiotic Evolution of Homo Sapiens and Homo Neanderthalis - Archaeal RNA Viroidal Quasi -Species Consortia and Human Species Identity - The Neoneanderthal Age and Kali Yuga

Archaea and Viroid Induced Symbiotic Human Evolution - Atavistic Neoneanderthalisation and Archaeal Life Elixir - Archaeal RNA Viroidal Quasi-Species Consortia and Human Species Identity

Archaea and Viroid Induced Symbiotic Human Evolution - The Philosopher's Stone and Transmutoid - Nuclear Energetics in Brain

Archaea and Viroid Induced Symbiotic Human Evolution - The Tridosha Theory of Three Biological Humours and Cerebral Dominance

Archaea and Viroid Induced Symbiotic Human Evolution - The Biology of Sexuality - Archaeal RNA Viroidal Quasi-Species Consortia and Sexual Identity

Archaea and Viroid Induced Symbiotic Human Evolution - The Human Mind - Conscious and Quantal Perception - Mind Downloading/Whole Brain Emulation on Brain Archaeal Colony Networks

Archaea and Viroid Induced Symbiotic Human Evolution - The Atavistic Neoneanderthalisation and Gut Microflora - Archaeal RNA Viroidal Quasi-Species Consortia and Human Species Identity

ISBN: 978-1-941926-91-8

9 781941 926918 >

Price: US $75

To order the series of books, please contact:
Open Science Publishers
Web: www.openscienceonline.com
Email: book@openscienceonline.com