

# **Chapter 5**

## **Endosymbiotic Archaea and Mucopolysaccharidotic Syndrome**

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Tropical Mucopolysaccharidotic Syndrome**

Dietary fibre deficiency leads to increased endosymbiotic and colonic archaeal growth and a tropical mucopolysaccharidotic dysautonomic hibernatory syndrome. Global warming leads to increase in endosymbiotic actinidic archaeal growth. Archaea are extremophiles. The actinidic archaea survive by catabolising cholesterol. The archaea and its antigens induce HIF alpha and activate the glycolytic pathway. The glycolytic pathway activation induces increased conversion of glucose to fructose by activation of the sorbitol pathway. Glucose is converted to sorbitol by the enzyme aldose reductase and sorbitol is converted to fructose by the action of sorbitol dehydrogenase. Fructose is phosphorylated by hexokinase or fructokinase to fructose phosphate. Hexokinase has a low  $K_m$  value for fructose and minimal amounts of fructose will be converted to fructose phosphate depleting the cellular ATP. ATP is converted to AMP and by the action of AMP deaminase is converted to uric acid. Thus there is resultant hyperuricemia and the depletion of ATP also produces membrane sodium potassium ATPase inhibition. Inhibition of membrane sodium potassium ATPase increases intracellular calcium and depletes magnesium. This produces cell death by opening up the mitochondrial PT pore, NF $\kappa$ B activation and immune activation, glutamate excitotoxicity and oncogene activation leading to systemic disorders. The depletion of ATP finally inhibits hexokinase as such and glucose phosphorylation stops blocking the glycolytic pathway and its coupling to the mitochondrial oxidative phosphorylation by the action of PT pore hexokinase. The cell is depleted of energy by glycolysis and the oxidative phosphorylation scheme and dies. Thus global warming via induction of glycolysis and Warburg phenotype and the increased conversion of glucose to fructose and the resultant cellular depletion

of ATP can produce systemic disorders and cell dysfunction as well as death. This can produce the global warming related systemic syndrome.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Neanderthalisation in Tropical Mucopolysaccharidotic Syndrome**

Global warming leads to neanderthalisation of the human species consequent to growth of actinidic archaea. The Neanderthals were accustomed to a ketogenic high fat, high protein diet. The ketone bodies were oxidised to generate ATP in the mitochondria. The neanderthalised humans due to actinidic archaeal growth due to consumption of a glucogenic diet leads to induction of glycolytic enzymes. The glycolytic enzymes are cytosolic. The glycolytic enzymes are antigenic in the neanderthalised humans. The glycolytic enzymes were suppressed in homo neanderthalis who ate ketogenic diet. This results in suppression of induced glycolytic enzymes by antibody formation in homo neoneanderthalis which arises due to archaeal growth consequent to global warming. The blockade of glycolysis results in blockade of cell energetics. This results in hyperglycemia and metabolic syndrome X. The glucose is converted to sorbitol by aldose reductase and sorbitol is converted to fructose by fructokinase. Fructokinase enzyme is native to Neanderthals as they consumed fruits along with fat and protein from meat. Fructose is phosphorylated to fructose phosphate which depletes the cell of ATP. This inhibits membrane sodium potassium ATPase leading onto increase in intracellular calcium and reduction in intracellular magnesium. This produces glutamate excitotoxicity and neurodegeneration, oncogene activation and malignancy, NFkB activation and autoimmune disease, release of mono amine neurotransmitters from presynaptic vesicles and schizophrenia and all systemic diseases. The increased glucose gets metabolised by archaeal glycolysis and citric acid cycle. The

pyruvate generated by archaeal glycolysis enters the GABA shunt scheme generating succinyl CoA and glycine which are substrates for porphyrin synthesis. The archaeal citric acid cycle can be reductive generating carbon dioxide fixation akin to the Calvin cycle of photosynthesis or oxidative generating acetyl CoA which is used for cholesterol synthesis by the archaeal mevalonate pathway. The archaeal glycolysis also generates fructose 1,6-diphosphate which enters the pentose phosphate pathway producing D xylulose phosphate which is a substrate for DXP pathway of archaeal cholesterol synthesis. The archaea synthesizes cholesterol by both the mevalonate pathway and DXB pathway. The archaea can use cholesterol for energetics by catabolizing it. The cholesterol ring is oxidised to pyruvate which enters the GABA shunt which provides substrates for the citric acid cycle. The pyruvate is converted to glutamate and ammonia. The archaea can oxidise ammonia for energy. The side chain of cholesterol is oxidised to butyrate and propionate which can also be further utilised for energy purposes. The archaeal energetics depends on glycolysis, citric acid cycle, ammonia oxidation and cholesterol catabolism. The antibodies against the glycolytic enzymes aldolase, enolase, GAPDH and pyruvic kinase contributes to metabolic syndrome X, schizophrenia, mood disorders, autism, multiple sclerosis, lupus, Alzheimer's disease and Parkinson's disease. The upregulation of glycolysis contributes to neoplastic state. The antibodies are produced against induced glycolytic enzymes as well as archaeal glycolytic enzymes. The blockade of glycolysis leads to a secondary mitochondrial dysfunction. The glycolytic scheme is coupled to mitochondrial oxidative phosphorylation by mitochondrial PT pore hexokinase. The antibodies against glycolysis blocks glycolysis and produce secondary mitochondrial dysfunction. The cell uses all its energetics. The depletion of ATP by phosphorylation of fructose produces membrane sodium potassium ATPase inhibition and cell hibernation as well as stem cell

transformation. The human tissue systems come to a halt and form a framework for archaeal colonies to thrive. The human body becomes a zombie for archaeal colonies which are eternal. This affects the function of organ systems like the liver producing cirrhosis, the lung producing interstitial lung disease, renal fibrosis and CRF, cardiomyopathy and Alzheimer's disease. This can be called as the zombie syndrome. The depletion of ATP by phosphorylation of fructose generates ADP and AMP which by action of AMP deaminase produces uric acid and hyperuricemia. The zombie syndrome converts the human body to a framework for an archaeal colony network. The archaea can secrete RNA and DNA viroids which can recombine with human endogenous retroviral sequences and human DNA sequences generating new RNA viruses, DNA viruses and bacteria. Thus the zombie syndrome results in the generation of new bacteria and viruses. The zombie syndrome can be treated by suppression of glycolysis. This can be done by giving a ketogenic diet derived from fibre short chain fatty acids-butyrate and acetate, polyunsaturated fatty acids and short chain fatty acids like lauric acid.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Upregulated Fructose Catabolism Related Tropical Mucopolysaccharidotic Syndrome**

The global warming zombie syndrome results in conversion of glucose to fructose by the induction of aldose reductase consequent to dehydration. The glucose is first converted to sorbitol by aldose reductase and then by sorbitol dehydrogenase to fructose. Fructose has got a high value for ketokinase and is phosphorylated and enters the pentose phosphate pathway. Fructose is converted to glucosamine phosphate and galactosamine phosphate. There is increased synthesis of glycosaminoglycans. This produces GAG accumulation in the vessels producing mucoid angiopathy, kidney producing MEN, heart producing

EMF, pancreas producing CCP and thyroid producing MNG. It can also result in fibrosis of the lung and liver producing cirrhosis and interstitial lung disease. These diseases are common in warm tropical countries, south of equator and can be called as the Lemurian syndrome. The increase km value of fructose for ketokinase results in increased phosphorylation of fructose over glucose producing hyperglycemia and metabolic syndrome. The phosphorylation of fructose depletes the cell of ATP and converts ATP to AMP and ADP which is acted upon by ATP deaminase producing uric acid. The channelling of fructose into the pentose phosphate pathway results in increased production of ribose and nucleic acid synthesis and uric acid production consequent to purine degradation. There is hyperuricemia. The tubular defect of MEN produces hypokalemia and hyponatremia. The increase in fructose produces fructose glycation of proteins resulting in the formation of antigenic proteins and autoimmune disease. Fructose can produce inflammation and autoimmunity. This is called as fructositis. The increase in fructose which is channelled to the pentose phosphate pathway and ribose synthesis results in increased nucleic acid synthesis and cancer formation. The depletion of cellular ATP consequent to phosphorylation of fructose results in cell death and neuronal degeneration. Cell death in intestinal mucosa breaches the blood gut barrier producing leaky guts syndrome, acute phase response and metabolic syndrome X as well as autoimmunity. The phosphorylation of fructose and depletion of ATP results in membrane sodium potassium ATPase inhibition and increase in intracellular calcium and reduction in intracellular magnesium. This results in insulin resistance, glutamate excitotoxicity, oncogene activation, monoamine secretion from presynaptic vesicles and schizophrenia as well as NFkB activation and autoimmunity. The channelling of fructose to glucosamine synthesis and increased synthesis of GAG results in increased heparan sulphate synthesis which will combine with proteins forming amyloid. Amyloid formation is the basis of motor neuron disease where ribonucleoproteins form amyloid. In

Parkinson's disease alpha synuclein forms amyloid. In Alzheimer's disease beta amyloid is formed. The tumour suppressor proteins forms amyloid and results in oncogenesis. The islet associated amyloid polypeptide forms the basis of defective insulin secretion in metabolic syndrome X.

Global warming leads to aldose reductase induction. Aldose reductase converts glucose to sorbitol. Sorbitol is converted to fructose by sorbitol dehydrogenase. Fructose is phosphorylated by fructokinase and ketokinases have a higher  $K_m$  value for fructose than glucose. This results in rapid phosphorylation of fructose and depletion of cellular ATP. The depletion of cellular ATP has two consequences. ATP is converted to ADP and AMP. ADP and AMP are acted upon by deaminases generating uric acid. Hyperuricemia is a feature of global warming related metabolic phenomena. The depletion of ATP results in renal tubular dysfunction producing loss of electrolytes and amino acids. This results in non-specific aminoaciduria, hypokalemia and hyponatremia. There is no edema or hypertension. This produces a chronic tubulointerstitial disease called Mesoamerican nephropathy. The cellular depletion of ATP can produce cell death leading onto neuronal degeneration. The depletion of ATP produces membrane sodium potassium ATPase inhibition and increase in intracellular calcium and reduction in intracellular magnesium. This produces immune activation by NF $\kappa$ B induction, oncogene activation, glutamate excitotoxicity and neurodegeneration, release of monoamines into synaptic junction and schizophrenia. The depletion of ATP can also affect the gut blood barrier producing an acute phase response and leaky gut syndrome. The acute phase response can lead to metabolic syndrome X. The depletion of ATP owing to the affinity of ketokinases for fructose leads to lack of phosphorylation of glucose. This leads to hyperglycemia and metabolic syndrome X. The glucose that accumulates gets converted to fructose producing the syndrome of fructositis.

Fructose has got two metabolic fates. The fructose can get phosphorylated to fructose phosphate and enter the pentose phosphate pathway generating ribose important in nucleic acid synthesis. The purine catabolism can generate uric acid. The synthesis of nucleic acid can lead to increased cell proliferation and oncogenesis. Thus global warming related fructositis can lead to oncogenesis. The fructose that gets accumulated can also enter the pathway for glycosaminoglycan and proteoglycan synthesis. The fructose is phosphorylated and converted to fructose phosphate which can be converted to glucosamine and galactosamine which are substrates for glycosaminoglycan synthesis. This results in accumulation of connective tissue mucopolysaccharides in the body and tissues leading onto disease states like endomyocardial fibrosis, chronic calcific pancreatitis, multinodular goitre and mucoid angiopathy which can be classified as a cardiovascular and endocrine syndrome of unknown origin related to global warming akin to MEN. The accumulation of mucopolysaccharides can occur in the liver producing cirrhosis of the liver and in the lung producing interstitial lung disease. The mucopolysaccharide, heparan sulphate can combine with prion proteins producing amyloid deposition leading onto conformational diseases. This include the prion proteins leading onto Creutzfeldt Jakob's disease, copper zinc dismutase and motor neuron disease, alpha synuclein and Parkinson's disease and tumour suppressor protein and cancer. The relation between islet associated amyloid polypeptide and diabetes mellitus is well known. Thus the conversion of fructose to GAG results in conformational disease and amyloid accumulation.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Fructositis Related Autoimmunity in Tropical Mucopolysaccharidotic Syndrome**

The accumulation of fructose results in fructosylation of proteins akin to glycation of proteins. Fructosylated proteins are antigenic. This results in increased frequency of autoimmune diseases like lupus and multiple sclerosis. The conversion to glucose to fructose and its phosphorylation depletes the cell of ATP and results in membrane sodium potassium ATPase inhibition. This increases the intracellular calcium which releases neurotransmitters from presynaptic vesicles. Thus there is an increase in glutamate and monoaminergic transmission leading to schizophrenia and autism. The increase in intracellular calcium can open up the mitochondrial PT pore releasing cyto C which activates the caspase cascade and cell death. This produces neuronal degeneration.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Porphyrinogenesis in Tropical Mucopolysaccharidotic Syndrome**

The conversion of glucose to fructose and phosphorylation of fructose results in depletion of cellular ATP. This stops the phosphorylation of glucose by glucokinase and generation of glucose 6-phosphate stops. The glycolytic process, the TCA cycle and its coupling to mitochondrial oxidative phosphorylation is inhibited. The body depends upon fatty acids and amino acids for energetics. The body can survive only on a ketogenic diet. The accumulated glucose forms a substrate for utilisation by endosymbiotic archaea. The archaea have glycolytic pathway which can convert glucose to pyruvate. The pyruvate can then enter the GABA shunt pathway generating succinyl CoA and glycine, the substrates for porphyrin synthesis by archaea and humans. Porphyrin supramolecular arrays or porphyrions can transfer electrons

synthesizing ATP. The archaea also has a partial citric acid cycle and the pyruvate generated by archaeal glycolysis can enter the partial citric acid cycle. The citrate can be used for lipid synthesis. The acetyl CoA generated from pyruvate by archaea can be used for cholesterol synthesis. The archaea can catabolize cholesterol to generate energy. The cholesterol ring is oxidised to pyruvate and the side chain oxidised to butyrate and propionate. This can be used for mitochondrial generation of ATP. The pyruvate generated by archaeal glycolysis can also undergo a reverse citric acid cycle for carbon dioxide fixation akin to the Calvin cycle. Thus the archaeal glycolysis, partial citric acid cycle, reverse citric acid cycle of carbon dioxide fixation, cholesterol synthesis by the mevalonate and DXP pathway and cholesterol catabolism dominates. The fructose generated by conversion to glucose can enter the pentose phosphate pathway generating D-xylulose phosphate and can be used to synthesize cholesterol. The archaeal pyruvate generated by glycolysis can also be converted to acetyl CoA which can enter the archaeal mevalonate pathway of cholesterol synthesis. Thus the archaea has got both pathway of cholesterol synthesis-the DXP pathway and mevalonate pathway. The fructose generated by conversion from glucose due to global warming enters the DXP pathway of cholesterol synthesis, the pentose phosphate pathway and nucleic acid synthesis and GAG synthesis. This can lead to multiple organ dysfunction with fibrosis and mucopolysaccharide accumulation which can be called as a Lemurian syndrome. The initial group of diseases EMF, CCP, MNG and mucoid angiopathy occur south of the equator in South India, South Africa and South America. The global warming related MEN is reported from Central America and South America. MEN belongs to the group of EMF, CCP, MNG and mucoid angiopathy. This can be called as the Lemurian syndrome as South Africa, South India, Australia and parts of South America were part of one single continental entity in the long past when Neanderthals exist. The global

warming and resulting conversion of glucose to fructose results in depletion of ATP due to more efficient phosphorylation of fructose over glucose. This results in ineffective glucose phosphorylation and accumulation leading to archaean growth. The accumulated fructose is converted to D-xylulose phosphate and used for the DXP pathway of cholesterol synthesis by the archaea. The cholesterol is catabolized by the endosymbiotic actinidic archaea generating digoxin. The growth of actinidic archaea results in increased porphyrin synthesis and perception of low level electromagnetic fields by dipolar porphyrin mediated quantal systems. The digoxin induced membrane sodium potassium ATPase inhibition in the setting of dipolar porphyrins in the cell can produce a pumped phonon system of quantal perception. This results in atrophy of the prefrontal cortex and cerebellar dominance leading to neanderthalisation of the human brain. This results from endosymbiotic archaean growth resulting from metabolonomics related to global warming. The same metabolonomics related to global warming results in the genesis of the Lemurian syndrome described above.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Fructolysis in Tropical Mucopolysaccharidotic Syndrome**

The fructose metabolic pathway is called fructolysis. Oxidative stress and osmotic stress due to global warming and actinidic archaean growth leads to induction of aldose reductase. This converts glucose to sorbitol and sorbitol is acted upon by sorbitol dehydrogenase produce fructose. Fructose normally undergoes fructolysis. Glycolysis is inhibited at the level of phosphofructokinase by ATP and citrate. The fructolytic pathway and fructose metabolism is confined to the liver and certain tissues and is not under this regulatory control. Fructose is converted to fructose 1-phosphate by fructokinase. Fructose 1-phosphate is acted upon by aldolase B or fructose 1-phosphate aldolase converting it into dihydroxy acetone phosphate. Dihydroxy acetone phosphate

has got two fates: (1) It is acted upon by triose phosphate isomerase to glyceraldehyde 3-phosphate. Glyceraldehyde 3-phosphate is converted to glucose 6-phosphate and then glucose 1-phosphate. Glucose 1-phosphate is used for glycogenesis. Dihydroxy acetone phosphate is acted upon by glycerol 3-phosphate dehydrogenase to glycerol 3-phosphate. Fructose 1-phosphate can be oxidised to pyruvate. Pyruvate can be decarboxylated to acetyl CoA. Acetyl CoA is used for fatty acid and cholesterol synthesis. Thus leads to triglyceride synthesis and VLDL formation. Fructose can thus be converted to storage glycogen, triglycerides and cholesterol. Global warming and ice age are extremophilic states. The human body goes into a state of hibernation and stores nutrients as glycogen and triglycerides. Fructose can increase lipogenic enzymes pyruvate kinase, malate dehydrogenase, citrate lyase, acetyl CoA carboxylase, pyruvate dehydrogenase and fatty acid synthase. Thus the metabolism is switched to the hibernatory mode from glucose catabolism. Glucose catabolism stops. The glucose that accumulates enters the archaeal primitive glycolytic and partial citric acid cycle as well as the GABA shunt pathway. The GABA shunt pathway of the archaea generates succinyl CoA and glycine the substrates for the porphyrin synthesis. Porphyrins can self organise to form supramolecular structures which can self replicate called porphyrions. Porphyrions are the ultimate self replicators. They can have a photoinduction induced electron transport chain and ATP synthesis. The porphyrions are dipolar and in the setting of porphyrin intercalating cell membrane producing sodium potassium ATPase inhibition can produce a pumped phonon system. This is a superconductive state at room temperature and can produce quantal perception. The porphyrins are macromolecular structures with a wave particular existence. Porphyrions are the ultimate quantal observer and mediate the conversion of the quantal foam to the particulate world. This global warming induced fructosemia and accumulated free glucose get catabolized by partial citric acid cycle and GABA shunt of archaea to

porphyrins generating porphyrions which can assume the quantal foam state and inhabit a multiverse universe with an eternal existence. The porphyrions can undergo photooxidation generating redox stress. Redox stress will further induce aldose reductase and increase fructosemia. The glucose remains unphosphorylated owing to the high  $K_m$  value of glucose for hexokinase as compared to fructose. The free glucose is catabolized by archaeal enzymes to porphyrins and porphyrions. The human body becomes a zombie for self replicating porphyrions. The porphyrions have quantal perception of low level of EMF. This produces prefrontal cortex atrophy and cerebellar dominance leading to neanderthalisation of the human brain. The human metabolic pathways of glycolysis and oxidative phosphorylation are blocked. The synthesis of glycogen, lipids, cholesterol and glycosaminoglycans dominates. The body switches into the anabolic hibernatory mode. The fructokinase induced by osmotic stress and oxidative stress of global warming is the switch for hibernatory mode leading onto metabolic syndrome or fat storage disease. The free glucose undergoes catabolism by archaeal glycolysis and GABA shunt to porphyrions. The porphyrins can act as a template formation of RNA viroids, DNA viroids, prions and they eventually symbiosed and live together as nanoarchaea. Thus the nanoarchaea can arise from porphyrin templates. The supramolecular porphyrin arrays can have an electron transport chain and ATP synthesis, a primitive form of mitochondria. The nanoarchaea can form as well as self replicate on porphyrin templates. The porphyrin supramolecular arrays or porphyrions can also self replicate. The human body becomes a zombie for abiogenetic porphyrions and nanoarchaea. The porphyrions can have a macroscopic quantal existence and inhabit multiverse universes. Thus the human metabolism grinds to a halt and the world of nanoarchaea and porphyrions which are eternal steps in. The human race as we know of extincts owing to the metabolonomics of global warming. It is back to the work board of evolution once more.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Fructositis in Tropical Mucopolysaccharidotic Syndrome**

This syndrome can also be called as fructosemia or fructositis. Oxidative stress can induce aldose reductase and convert glucose to fructose. The endosymbiotic archaea synthesizes digoxin by cholesterol catabolism. Digoxin inhibits membrane sodium potassium ATPase and increases intracellular calcium opening up the mitochondrial PT pore. This produces mitochondrial dysfunction and oxidative stress. Oxidative stress can induce aldose reductase and convert all glucose to fructose. Fructose has got a low  $K_m$  value for ketokinase compared to glucose and is preferentially phosphorylated. The glucose remains unphosphorylated and the glycolytic scheme and its coupled mitochondrial oxidative phosphorylation is slowed down or inhibited. The mitochondrial ATP and citrate can inhibit the phosphofructokinase and glycolysis, but cannot inhibit fructokinase or aldose reductase. Therefore the conversion of glucose to fructose continues. The fructose generated can inhibit mitochondrial function leading to more oxidative stress and still further induction of aldose reductase. The efficient phosphorylation of fructose depletes the cell of ATP producing oxidative stress and induction of NF $\kappa$ B resulting in chronic inflammation. Oxidative stress due to depletion of ATP can produce still further induction of aldose reductase and generation of fructose. The depletion of ATP makes the patient fatigue. The increase in fructose inhibits satiety and the patient feeding behaviour is altered leading onto obesity. This leads to a metabolic syndrome X. Metabolic syndrome X is a fat storage syndrome akin to hibernation. The fructose that is generated is converted to alpha glycerophosphate which is used for triglyceride synthesis. Fructose consumption can increase triglyceride synthesis and fatty liver. The depleted ATP due to fructose phosphorylation generates AMP and ADP which is converted to uric acid by deaminases. Uric acid can inhibit mitochondrial function. Uric acid can contribute to insulin resistance and metabolic syndrome X. Uric

acid can also produce endothelial dysfunction contributing to coronary artery disease and stroke. Uric acid inhibits aconitase which leads to accumulation of citrate. Uric acid can induce citrate lyase and fatty acyl CoA synthase leading onto fatty acid synthesis. The accumulated citrate can block the glycolytic pathway. The accumulated glucose gets converted to fructose by aldose reductase. Uric acid decreases reduced NADPH and oxidised NAD<sup>+</sup>. This affects the redox potential and leads to oxidative stress which further induces aldose reductase. Aldose reductase can be induced by hyperosmotic stress. This includes that created by hyperglycemia consequent to blockade of glucose phosphorylation as a result of selective fructose phosphorylation because of the low *k<sub>m</sub>* value of fructose for ketokinase. The same mechanism operates in the dehydration induced by global warming. This leads to hyperosmolarity which induces aldose reductase. These mechanisms are similar to what happens in hibernation in animals. Hibernating animals develop a metabolic syndrome put on weight, store fat, increase triglycerides, develop fatty liver and develop insulin resistance. Hibernation and metabolic syndrome X are fat storage syndromes. The Neanderthals evolved in the cold Eurasian steppes and developed a hibernation syndrome similar to metabolic syndrome with fat storage. The stress of the ice age would have induced redox stress, induce aldose reductase and converted glucose to fructose. The fructose would have been selectively phosphorylated to fructose phosphate which would have entered the pentose phosphate pathway generating ribose for nucleic acid synthesis, the glucosamine pathway for glycosaminoglycan synthesis and/or converted to alpha glycerophosphate for fatty acid and triglyceride synthesis. Fructosamia can also affect brain function. Fructose can inhibit BDNF and inhibit cortical growth producing a cerebellar dominant brain and prefrontal cortex atrophy. This would have resulted in neanderthalisation of the brain. The conversion of fructose phosphate to ribose via the pentose phosphate pathway increases nucleic acid synthesis and cell

proliferation. This leads to oncogenesis. The cell proliferation can also contribute to the bulky phenotype of the Neanderthal population. The fructokinase enzyme acts as an obesity switch. The opening of the obesity switch also contributes to the bulky phenotype Neanderthal population. The oxidative stress and osmotic stress of the ice age and global warming can induce aldose reductase mediated conversion of glucose to fructose via the enzyme sorbitol dehydrogenase. This also leads to induction of fructokinase, generation of fructose, fructosemia and fructositis. The increased fructose can fructosylate proteins producing antigenic proteins and autoimmune disease. Thus fructosemia can contribute to oncogenesis, metabolic syndrome X, neurodegeneration, psychiatric disorders like schizophrenia and autism as well as autoimmune disease. Fructosemia can contribute to insulin resistance. The selective phosphorylation of fructose owing to the low  $K_m$  value of ketokinase for fructose results in nonphosphorylation of glucose and hyperglycemia. Insulin resistance leads to further induction of aldose reductase and fructokinase. Fructose can produce ATP depletion and oxidative stress. Oxidative stress can induce NF $\kappa$ B producing chronic inflammation and TNF alpha can produce insulin resistance acting at the level of insulin receptor. The insulin resistance activates the aldose reductase fructokinase system still further which is also further activated by the osmotic and oxidative stress of extremes of climate like global warming and ice age. This leads to the Lemurian systemic syndrome of fructosemia and fructositis. Lemurian syndrome can produce CKD of unknown origin, pulmonary disease, cardiovascular disease, cirrhosis liver, gastro-intestinal disease and diabetes mellitus.

## **Dietary Fibre Deficiency, Endosymbiotic Archaea and Neanderthalisation in Tropical Mucopolysaccharidotic Syndrome**

The Neanderthals lived in the Eurasian Steppes which was cold. They evolved hibernatory metabolism and a fat storage syndrome to protect them from the cold. The Neanderthals evolved due to endosymbiotic archaeal growth. Endosymbiotic archaea are extremophiles and grow in extremes of climate - the ice age and global warming. The global warming results in increase in endosymbiotic archaeal growth and neanderthalisation of the homo sapien species. Neanderthalisation is a symbiotic phenomena. The global warming can lead to dehydration and osmotic stress. The archaea can catabolize cholesterol generating digoxin which can induce redox stress. Osmotic stress and redox stress leads to induction of the enzyme aldose reductase which converts glucose to sorbitol. Sorbitol is acted upon by sorbitol dehydrogenase and converted to fructose. Fructose can enter three metabolic schemes. The fructose is converted to alpha glycerophosphate and triglycerides. This results in storage of glucose and fructose as fat and a fat storage syndrome. The subcutaneous fat protects against variation in climatic temperature. The fructose can inhibit mitochondrial function and mitochondrial beta oxidation of fatty acids accentuating storage of fat. Fat can further fuel insulin resistance by fatty acids acting upon the insulin receptor. Insulin resistance leads to still further aldose reductase induction. The fructose can also enter the glucosamine pathway resulting in GAG synthesis and accumulation of mucopolysaccharides and proteoglycans. This can lead onto systemic connective tissue accumulation in visceral organs like liver producing cirrhosis, lung producing interstitial lung disease, kidney producing the MEN syndrome, the pancreas producing pancreatic fibrosis and CCP, the heart producing cardiomyopathy and EMF and the vascular tree producing mucoid angiopathy. The fructose has got a low km value for ketokinases as compared to

glucose and gets selectively phosphorylated. This results in cellular depletion of ATP and membrane sodium potassium ATPase inhibition resulting in increase of intracellular calcium. The calcium produces mitochondrial PT pore dysfunction and redox stress. Redox stress can induce aldose reductase. The depletion of ATP results in further inhibition of phosphorylation of glucose. This results in hyperglycemia. The archaea has got the glycolytic pathway, a partial citric acid cycle and a reverse citric acid cycle for carbon dioxide fixation. The archaea can induce the Warburg phenotype in the human tissues with increase glycolysis, inhibition of pyruvate dehydrogenase and mitochondrial oxidative phosphorylation inhibition. This results in accumulation of pyruvate which enters the GABA shunt scheme generating succinyl CoA and glycine for porphyrin synthesis. The accumulated glucose due to blockade of glucose phosphorylation is metabolized by archaea generating pyruvate. The pyruvate can enter the TCA cycle via pyruvate dehydrogenase generating acetyl CoA for fatty acid and cholesterol synthesis. The archaea can catabolize cholesterol and generate energy. The archaea can convert pyruvate via GABA shunt as said before to porphyrins. Thus there is increased porphyrin synthesis, cholesterol synthesis and catabolism, triglyceride synthesis, nucleic acid synthesis and GAG synthesis. The metabolic pattern changes. The blockade of glucose phosphorylation by fructose results in hyperglycemia which can block or inhibit porphyrin accumulation. The porphyrins have a wave particle existence in the macroscopic state and contribute to quantal perception or extrasensory perception in homo neanderthalis. The cellular depletion of ATP consequent to fructose phosphorylation results in generation of ADP and AMP which are acted upon by deaminases producing uric acid. Uric acid can block mitochondrial function generating redox stress and further induction of aldose reductase. Uric acid can inhibit the TCA cycle due to aconitase inhibition. This results in accumulation

of citrate which blocks glycolysis still further. The citrate is acted upon by the induced citrate lyase and fatty acid synthase producing fatty acids. This can lead to triglyceride synthesis and accumulation and a fat storage syndrome. Fatty acids can block glucose metabolism and the glycolytic pathway. The mitochondrial function is blocked by uric acid, fructose and digoxin. The porphyrin arrays can function as a supramolecular organism called porphyrions and transfer electrons and photons. This functions as a primitive form of mitochondria generating ATP. The inhibition of membrane sodium potassium ATPase due to ATP depletion results in membrane sodium potassium ATPase mediated ATP synthesis. The porphyrin array and membrane sodium potassium ATPase mediated ATP synthesis can provide for body energetics. The fructosemia can lead to increased ribose synthesis via the pentose phosphate pathway inducing nucleic acid synthesis and cell proliferation. This can lead to oncogenesis. The fructosemia can lead to fructosylation of proteins producing antigenic proteins. The depletion of ATP consequent to fructose phosphorylation can produce redox stress, NFkB activation and immune activation. This leads to autoimmune disease. Fructose can inhibit brain derived neurotrophic growth factor and lead to genesis of schizophrenia and autism. The cellular depletion of ATP due to fructose phosphorylation can lead to cell death and neurodegeneration. The low  $K_m$  value of fructose for ketokinase can lead to selective phosphorylation of fructose at a rapid rate depleting the cell of ATP stores. This inhibits glucose phosphorylation producing inhibition of glucose metabolism resulting in hyperglycemia and metabolic syndrome. The uric acid generated by this pathway can result in endothelial dysfunction, coronary artery disease and strokes. Thus the global warming related actinidic archaeal growth can lead onto fructositis, fructosemia and a Lemurian syndrome affecting multiple organ systems.

