Chronic Hyperinsulinaemia and Homoeopathy

Introduction
Excess levels of insulin, the main energy storage hormone, circulating in the blood than expected, relative to the level of glucose is called Hyperinsulinaemia (Psora). Hyperinsulinaemia is associated with hypertension, obesity, dyslipidemia, and glucose intolerance (Psora/ Sycosis). These conditions are collectively known as ‘Metabolic syndrome’.

Pathophysiology
Chronic exposure to refined carbohydrates and simple sugars can cause elevated levels of insulin, which drives glucose levels down (Psora). This can result in hypoglycaemia (Psora). Over time, tissues may become less sensitive to insulin (Psora-Syphilis) and as a result glucose cannot enter the cells as easily. This means more glucose in the bloodstream and a greater tendency to convert it into fat instead of energy. Elevated insulin levels cause the body to have difficulty in breaking down fat too.

In type 2 diabetes, body cells become resistant to the effects of insulin (Pseudopsora). The insulin binding receptors on cells become less sensitive to insulin concentrations (Syphilis) resulting in Hyperinsulinaemia (Sycosis) and disturbances in insulin release (Psora). With a reduced response to insulin, the beta cells of the pancreas secrete increasing amounts of insulin in response to the continued high blood glucose levels resulting in Hyperinsulinaemia (Psora/ Sycosis). In insulin resistant tissues, a threshold concentration of insulin is reached causing the cells to uptake glucose and therefore decreases blood glucose levels (Psora). The high levels of insulin resulting from insulin resistance may increase insulin resistance (Syphilis).

Neonatal Hyperinsulinaemia
Hyperinsulinaemia in neonates can be due to a number of environmental and genetic factors. If the mother of the infant is a diabetic, and does not properly control her blood glucose levels, the hyperglycemic maternal blood can create a hyperglycemic environment in the foetus. To compensate for the increased blood glucose levels, foetal pancreatic beta cells can undergo hyperplasia (Sycosis). The rapid division of beta cells results in increased levels of insulin being secreted to compensate for the high blood glucose levels (Sycosis). Following birth, the hyperglycemic maternal blood is no longer accessible to the neonate resulting in a rapid drop in the newborn’s blood glucose levels (Psora). As insulin levels are still elevated this results in Hyperinsulinaemia. The Hyperinsulinaemia condition subsides after one to two days.

Aetiology
High levels of insulin can block stress hormones, called as catecholamines, which normally cause the release of cellular energy (Psora/ Syphilis). For normal metabolism to occur, the body needs a balanced input of insulin and catecholamines. Insulin blocks activation of the protein kinase A (PKA) enzyme (Psora/ Syphilis). After a meal, insulin levels go up (Psora), and the body stores energy primarily as triglycerides, or fat, in adipose tissue for future use. When energy is needed, catecholamine triggers
Activation of PKA, and energy is released by cells. But in people with Type II diabetes, the hormonal balance has been thrown off, because the body continues to produce and store more triglyceride instead of breaking down the fat as released energy (Psora/ Sycosis).

Obese people have an excess of adipose tissue which secrete various metabolites, hormones and cytokines that may play a role in causing Hyperinsulinaemia. Cytokines, especially adiponectins, secreted by adipose tissue directly affect the insulin secretion. Adiponectins are cytokines that are inversely related to percent body fat. People with low body fat have higher concentrations of adiponectins where as people with high body fat have lower concentrations of adiponectins. Hyperinsulinaemia can be due to low adiponectin concentrations in obese people.

Other causes of Hyperinsulinaemia may be Neoplasm, pancreatic cancer, PCOS and Trans Fats. (Psora/ Syphilis/ Sycosis)

**Symptoms**
There are often no noticeable symptoms of Hyperinsulinaemia except hypoglycaemia, marked by -

- Temporary muscle weakness (Psora)
- Brain fog (Psora)
- Fatigue (Psora)
- Temporary thought disorder, or inability to concentrate (Psora/ Syphilis)
- Visual problems such as blurred vision or double vision (Psora/ Sycosis)
- Headaches (Psora/ Syphilis/ Sycosis)
- Shaking/Trembling (Psora)
- Thirst (Psora/ Pseudopsora)

Other symptoms include-

Weight gain especially around the waist, producing the apple shape, not the pear shape. (Sycosis)

High systolic blood pressure (Psora/ Sycosis)

High diastolic blood pressure (Psora/ Sycosis)

High Total Cholesterol (Psora/ Sycosis)

Early male pattern baldness: Although early baldness on the top of the head may be a non-modifiable risk factor for heart disease, it may serve as a useful clinical marker to identify men at increased risk of insulin problems and cardiac risk. (Psora/ Syphilis)

Insulin resistance may play a role in the development of gout. Gout is strongly associated with the consequences of insulin resistance i.e. obesity, hypertension, hyperlipidemia and diabetes. (Psora/ Sycosis)

Hyperinsulinaemia and insulin resistance are both factors that increase the risk of developing type 2 diabetes. Hyperinsulinaemia often predates diabetes by several years. (Psora/ Syphilis)

A majority of patients with PCOS have insulin resistance and/or are obese. There is a lot of evidence that high levels of insulin contribute to increased androgen production, which worsens the symptoms of PCOS. (Psora/ Sycosis)

**Risk factors**

Very early puberty onset

Girls with premature puberty have been found to have elevated insulin and DHEA levels. This contributes to the weight gain usually seen in advanced stages of PCOS. (Psora/ Sycosis)
Lack of Sleep
Continued insomnia may cause body cells less sensitive to insulin which, over time, can raise the risk of obesity, high blood pressure and diabetes. Chronic sleep deprivation (under 6.5 hours per night) has the same effect on insulin resistance as aging. (Psora/ Syphilis)

Stress
Cortisol blocks the insulin receptor as its undesirable effects and contributes to insulin resistance by decreasing the rate of glucose uptake. (Psora)

Syndrome X / Metabolic Syndrome
Syndrome X or Metabolic Syndrome is the variable combination of obesity (usually central in distribution), insulin resistance with elevated insulin levels, high blood cholesterol and hypertension. Metabolic Syndrome causes Hyperinsulinemia. (Psora/ Syphilis/ Sycosis)

Consequences of Hyperinsulinaemia
• May lead to hypoglycemia or Diabetes mellitus type 2 (Pseudopsora)
• Increased risk of PCOS (Psora/ Sycosis)
• Increased synthesis of VLDL (hypertriglyceridemia) (Psora/ Sycosis)
• Increased sodium retention by the renal tubules causing Hypertension (Psora/ Sycosis)
• Damage to endothelial cells causing Coronary Artery Disease (Psora/ Syphilis)
• Increased risk of cardiovascular disease (Psora/ Sycosis)
• Weight gain and lethargy, may be due to hypothyroidism. (Psora/ Sycosis)
• Gout / Hyperuricemia (Psora/ Sycosis)
• Polycystic Ovary Syndrome (PCOS) (Psora/ Sycosis)

Treatment
Treatment is typically achieved via diet and exercise. A low carbohydrate diet is particularly effective in reducing hyperinsulinism.

It has been shown in many studies that physical exercise improves insulin sensitivity.

Cinnamon
Cinnamon with each meal helps keep insulin and blood sugar levels under control. The typical ½ to ¾ teaspoon dose contains a phytochemical called methyl hydroxy chalcone polymer (MHCP) which improves cellular glucose utilization and increases the sensitivity of insulin receptors in laboratory studies.

Short Repertory of Insulin related disorders
ABDOMEN - PANCREAS; complaints of - insulin secretion decreased- cortico.
GENERAL - DIABETES MELLITUS - insulin dependent- ins. nat-p. sulph.
Toxicity - INSULIN, poisoning, ailments, from- ins. lyc. phos.

Short Repertory of Diabetes
Ankles - SWELLING, ankles - diabetes, in- arg-met.
CHEST - PHTHISIS pulmonalis - accompanied by – diabetes- phos.
CLINICAL - ACIDOSIS - diabetes mellitus, with- senn.
Clinical - blackness, tissues, external parts – diabetic- Ars. con. Kreos. kres. lach. Sec. solid.
Clinical - DIABETES, mellitus - coma, diabetic- allox. ins.
Clinical - edema, general - diabetes, mellitus, with- lac-ac.

Clinical - ulcers, general - diabetic- syzyg.

Constitutions - WEAK, constitutions - diabetes, mellitus, in- arg-met. ars. carc. coca lac-ac. PH-AC. PHOS.

EXTREMITIES - GANGRENE - diabetic- ars. carb-ac. con. lach. sec. solid.

EXTREMITIES - GANGRENE - Feet - diabetic- lyce.

EXTREMITIES - PAIN - gouty - joints - diabetes, with- phase.

EXTREMITIES - PAIN - gouty - upper limbs - joints - diabetes, with- phase.

EXTREMITIES - PAIN - Lower limbs - Sciatic nerve - accompanied by - diabetes mellitus- kreos.

EXTREMITIES - PAIN - rheumatic - diabetes, in- lac-ac.

EXTREMITIES - SWELLING - Ankle - diabetes, in- arg-met.

EXTREMITIES - SWELLING - general - lower limbs - ankles - diabetes, in- arg-met.

EXTREMITY PAIN - GENERAL - rheumatic - diabetes, in- lac-ac.

EXTREMITY PAIN - JOINTS - gouty - diabetes, with- phase.

EYE - INFLAMMATION - retina - diabetic- sec.

EYES - INFLAMMATION - retina, retinitis - diabetes, in- sec.

Eyes - RETINITIS, inflammation, retina - diabetic-crot-h. phos. sec.

FEMALE - MENSES - suppressed - diabetic attack, during- uran-n.

Female - MENSES, general - ailments, menses, during - diabetes, in- uran-n.

Female - MENSES, general - suppressed - diabetic attack, during- uran-n.

FEMALE GENITALIA/SEX - MENSES - suppressed menses - diabetes; in- uran-n.

Fever - TYPHOID, fever, salmonella - diabetes- sul-ac.


Gangrene - diabetic original- con. lach. solid.

GENERALITIES - WEAKNESS, enervation, exhaustion, prostration, infirmity - diabetes mellitus, in- Arg-met. Ars. Lac-ac.


GENERALS - DIABETES MELLITUS - bronze diabetes- adren.


GENERALS - FAMILY HISTORY of - diabetes mellitus- carc. sacch. thu.

GENERALS - INFLAMMATION - gangrenous - diabetics; in- ars. nat-pyru. sec.

GENERALS - NEUROLOGICAL complaints - accompanied by - diabetes- helon.

GENERALS - SHOCK - followed by - diabetes mellitus- op.


Glands - pancreas, general - kidneys, disease of, preceding or accompanying diabetes mellitus, or bright’s disease- Phos.

Impotency - diabetes, with- coca mosch. ph-ac.

Itching - diabetes, in- mang.
Joints - ACHING, pain - diabetes, in- rat.
KIDNEYS - COMPLAINTS of kidneys - accompanied by - diabetes- saroth.
Kidneys - PAIN, kidneys - diabetes, in- ph-ac. phos.
Kidneys - SORE, pain - diabetes, in- rat.
Kidneys - WEAK, kidneys - diabetes, with- Phos.
Lims - GANGRENE, limbs - diabetic- carb-ac. con. lach. sec. solid.
Liver - ENLARGED, liver - diabetes, in- Nat-s.
Liver - SHARP, pain - diabetes, in- sul-ac.
Liver - TENDER - diabetes, mellitus, in- kali-br.
Male - ERECTIONS, penis, troublesome - incomplete - diabetes, with- coca mosch. ph-ac.
MALE ERECTIONS, troublesome - incomplete - diabetes, with- coca mosch. ph-ac.
MALE ERECTIONS, troublesome - wanting, impotency - diabetes, with- HELON. mosch.
Male - IMPOTENCY, sexual - diabetes, with- coca Helon. mosch. ph-ac.
Male - SEX, male - decreased, desire - diabetes, in- coca Cupr.
MALE - SEXUAL - desire - diminished - diabetes, in- Cupr.
MALE GENITALIA/SEX - ERECTIONS - wanting - diabetes, with- acon. cann-s. coca con. cupr. eup-pur.
Helon. kali-c. mosch. ph-ac. sulph.
MALE GENITALIA/SEX - SEXUAL DESIRE - diminished - diabetes; in- Cupr.
Menses - absent, suppressed, amenorrhoea - diabetes, in- uran-n.
MIND - ALCOHOLISM - diabetes; with- med. nux-v.
MIND - ALCOHOLISM, dipsomania - diabetes, with- med.
MIND - ANXIETY - diabetes; in- cod. Nat-s.
MIND - COMA - diabetes; in- alun. ars. carb-v. carb-n-o. cur. op.
MIND - DEPRESSION, sadness - diabetes, with- helon. lyc. nat-s. op.
MIND - DULLNESS, sluggishness, difficulty of thinking and comprehending - diabetes, in- acet-ac. HELON. NAT-S. OP. sul-ac.
MIND - FEAR - diabetes, in- cod. NAT-S.
MIND - FEAR - sudden - followed by - diabetes mellitus- op.
MIND - GRIEF - diabetes; with- aur-m-n. aur. ign. mag-m. nat-s. ph-ac. tarent.
MIND - MEMORY - weakness of memory - diabetes; in- kali-br. lyc. nux-m. nux-v. ph-ac.
MIND - MEMORY - weakness, loss of - diabetes, in- OP.
MIND - PROSTRATION of mind, mental exhaustion, brain fag - diabetes, in- NAT-S.
MIND - RESTLESSNESS - diabetic- helon.
Mouth - CLAMMY, mouth - diabetes, in- uran-n.
Pulse - FAST, pulse, elevated, exalted - diabetes, in, 90, relieved- uran-n.
Pulse - SMALL, pulse - diabetes, in- uran-n.
Pulse - WEAK, pulse - diabetes mellitus, in- kali-br.
RECTUM - CONSTIPATION - diabetes mellitus, with- symph.
Retina - inflammation - diabetic- sec.
SKIN - GANGRENE, from burns or gangrenous sores - diabetic- ARS. carb-ac. con. echi. KREOS. kres. lach. SEC. solid.
SKIN - ITCHING - diabetes, in- agar. calad. mang.
SKIN - ITCHING - diabetes, in- mang.
SKIN - ITCHING - diabetics; in- Ceph-d-i.
Skin - ITCHING, skin - diabetes, in- mang.
SKIN - ULCERS - diabetes, in- syzyg.
SKIN - ULCERS – diabetic- syzyg.
Sleep - INSOMNIA, sleeplessness - diabetics, in- carc. coca Uran-n.
SLEEP - SLEEPLESSNESS - diabetics, in- Uran-n.
SLEEP - SLEEPLESSNESS - general - diabetics, in- uran-n.
STOMACH - THIRST - extreme - diabetes mellitus, with- sat-h.
TEETH - Aggravation - cough - diabetes in- sec.
TEETH - CARIES, decayed, hollow - diabetes mellitus-sul-ac.
TEETH - CARIES, decayed, hollow - general - diabetes, in- sul-ac.
TEETH - COUGH agg. - diabetes; in- sec.
Teeth - decay, caries; hollow - diabetes, in- sul-ac.
Urine - PROFUSE, increased, urine - diabetes, with- acet-ac. Phos.
Vision - DIM, vision - diabetes, in- phos. tab. tarent.
Vision - DIM, vision - dull - diabetes, in- sul-ac.
Weakness - DIABETES, mellitus, weakness, in- alf. Arg-met. Ars. carc. coca Lac-ac. PH-AC. PHOS.

Bibliography

Encyclopedia Homoeopathica

Chapter 103. Normal Pregnancy > Endocrine System Tintinalli’s Emergency Medicine

Chapter 11. Cardiovascular Disorders: Vascular Disease > Relation to Insulin Resistance Pathophysiology of Disease, 6e

Chapter 151. Diabetes Mellitus and Other Endocrine Diseases > Etiology and Pathogenesis Fitzpatrick’s Dermatology in General Medicine, 8e

Chapter 16. Disproportionate Fetal Growth > Pathogenesis CURRENT Diagnosis & Treatment: Obstetrics & Gynecology, 11e

Chapter 17. Polycystic Ovarian Syndrome and Hyperandrogenism > Acanthosis Nigricans Williams Gynecology, 2e

Chapter 18. Gynecologic Disorders > Clinical Findings CURRENT Medical Diagnosis & Treatment 2014

Chapter 18. Hypoglycemic Disorders > Clinical Presentation Greenspan’s Basic & Clinical Endocrinology, 9e

Chapter 18. Hypoglycemic Disorders > Congenital Hyperinsulinism Greenspan’s Basic & Clinical Endocrinology, 9e

Chapter 18. Hypoglycemic Disorders > Diagnosis Greenspan’s Basic & Clinical Endocrinology, 9e
Chapter 4. Hypothalamus and Pituitary Gland > Response to Treatment Greenspan's Basic & Clinical Endocrinology, 9e

Chapter 41. Pancreatic Hormones & Antidiabetic Drugs > Increased Cancer Risk Basic & Clinical Pharmacology, 12e

Chapter 51. Preventive Strategies for Coronary Heart Disease > Rationale Hurst's The Heart, 13e

Chapter 6. Dermatologic Disorders > Diet CURRENT Medical Diagnosis & Treatment 2014

Chapter 69. Pathophysiology of Hypertension > Does Insulin Resistance Cause Hypertension Independent of Hyperinsulinemia? Hurst's The Heart, 13e

Chapter 69. Pathophysiology of Hypertension > What Is the Role of Metabolic Syndrome or Insulin Resistance in Primary Hypertension? Hurst's The Heart, 13e

Chapter 7. Endocrine Pancreas > Long-Term Effects Endocrine Physiology, 4e

Chapter 77. Biology of Obesity > Insulin resistance and type 2 diabetes mellitus Harrison's Online

Chapter 9. Abortion > Polycystic Ovarian Syndrome Williams Obstetrics, 23e

Chapter 9. Glucocorticoids and Adrenal Androgens > Effects on Adipose Tissue Greenspan's Basic & Clinical Endocrinology, 9e

Chapter 9. Glucocorticoids and Adrenal Androgens > Laboratory Findings Greenspan’s Basic & Clinical Endocrinology, 9e

Chapter 9. Glucocorticoids and Adrenal Androgens > Summary Greenspan’s Basic & Clinical Endocrinology, 9e

Section 17. Skin Signs of Vascular Insufficiency > Risk Factors for Atherosclerosis Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology, 7e

Section 5. Miscellaneous Epidermal Disorders > Etiology and Pathogenesis Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology, 7e

Radar 10