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Diabetes Mellitus: Its Complications and Homoeopathic Therapeutics

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ABSTRACT

Background:

Diabetes mellitus is a chronic metabolic disorder characterised by persistent hyperglycaemia resulting from impaired insulin secretion, insulin action, or both. The global prevalence of diabetes is rapidly increasing, particularly in developing countries such as India, leading to significant morbidity and mortality due to its systemic complications.

Objective:

The present review aims to provide a comprehensive overview of diabetes mellitus, including its classification, pathogenesis, clinical manifestations, complications, differential diagnosis, and homoeopathic management.

Methods:

This review was prepared using information collected from standard contemporary medical textbooks, endocrinology references, Homoeopathic Materia medica, repertories, and classical homoeopathic literature. Relevant data regarding epidemiology, diagnostic criteria, pathophysiology, complications, and therapeutic approaches were analysed and compiled systematically.

Results:

The study highlights the major types of diabetes mellitus, namely Type 1, Type 2, and gestational diabetes mellitus, along with their etiopathogenesis and clinical presentations. Detailed discussion of acute and chronic complications was undertaken, including diabetic ketoacidosis, hypoglycaemia, hyperosmolar hyperglycaemic state, diabetic retinopathy, nephropathy, neuropathy, cardiovascular disease, and peripheral vascular disease. The review also emphasizes the role of oxidative stress, insulin resistance, endothelial dysfunction, and advanced glycation end products in the development of diabetic complications. From the homoeopathic perspective, diabetes mellitus is interpreted as a chronic miasmatic disorder requiring individualized treatment based on totality of symptoms, constitutional background, and miasmatic evaluation. Important homoeopathic remedies and repertorial references relevant to diabetes mellitus were also discussed.

Conclusion:

Diabetes mellitus is a multifactorial chronic disease with widespread systemic complications affecting quality of life and survival. Early diagnosis, proper metabolic control, lifestyle modification, and comprehensive management are essential to reduce disease burden. Homoeopathy offers a holistic and individualized therapeutic approach that may complement conventional management in improving patient well-being and reducing complications.

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Diabetes mellitus is a clinical syndrome characterised by an increase in plasma blood glucose (hyperglycaemia). The cause is either a disturbed insulin secretion or a disturbed insulin effect or usually both.The burden of diabetes is high and increasing globally, and in developing economies like India, mainly fuelled by the increasing prevalence of overweight/obesity and unhealthy lifestyles.

In 2019, Approximately 463 million adults (20-79 years) were living with diabetes; by 2045 this will rise to 700 million. The proportion of people with type 2 diabetes is increasing in most countries. 79% of adults with diabetes were living in low- and middle-income countries. China has the largest number of people with diabetes in the World (114.4 million), followed by India with 72.9 million which is expected to rise to over 134 million by 2045. The greatest number of people with diabetes were between 40 and 59 years of age. 1 in 2 (232 million) people with diabetes were undiagnosed.

In the last 20 yrs. there has been a threefold increase in the prevalence of diabetes& today it is estimated that there are over 20 million diabetic patients in India. India's diabetes population now ranks first in the world.

Prevalence in rural Bengal is in between 3.5%-5.7%. Three districts of west Bengal have high prevalence of Diabetes –Howrah (13.2%), Kolkata (12%), & Burdwan (8.7%). Prevalence is comparatively low in Purulia (2.7%), Bankura (3%), Dinajpur east (3.6%) & west (3.5%).

Diagnostic Criteria for Diabetes-

Current World Health Organization and American Diabetes Association diagnostic criteria for diabetes and intermediate hyperglycaemia-

	Diabetes (WHO)	Intermediate hyperglycaemia (WHO)		Diabetes (ADA)	Prediabetes (ADA)
		Impaired glucose tolerance	Impaired fasting glucose		
Fasting plasma glucose	≥ 126 mg/dl	< 126 mg/dl	110 – 125 mg/dl	≥ 126 mg/dl	100 – 125 mg/dl
	And/ or	And	And	Or	Or
2 hr plasma glucose during a 75 g OGTT	≥ 200 mg/dl	140 – 199 mg/dl	140 mg/dl	≥ 200 mg/dl	140 – 199 mg/dl
	And/or			Or	Or
Glycated haemoglobin	≥ 6.5%			≥ 6.5%	5.7 – 6.4 %
Random plasma glucose	≥ 200 mg/dl in the presence of diabetes symptoms			≥ 200 mg/dl in the presence of diabetes symptoms	

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Classification of Diabetes-

The most recent WHO classification was published in 1999 and returned to four basic types type 1 diabetes, type 2 diabetes, other specific types, and gestational diabetes.

Aetiological classification of diabetes

1. Type 1 diabetes (immune-mediated beta cell destruction, usually leading to absolute insulin deficiency)
2. Type 2 diabetes (may range from predominantly insulin resistance with relative insulin deficiency to a predominantly insulin secretory defect with insulin resistance)
3. Specific types of diabetes:
   a) Genetic defects of beta cell development or function characterized by mutations in:
      I. Hepatocyte nuclear transcription factor (HNF) 4α (MODY 1)
      II. Glucokinase (MODY 2)
      III. HNF-1α (MODY 3)
      IV. Insulin promoter factor-1, HNF-1β, NeuroD1, and others leading to other forms of MODY
      V. Insulin, subunits of ATP-sensitive potassium channel leading to permanent neonatal diabetes
      VI. Mitochondrial DNA
      VII. Other pancreatic islet regulators/proteins such as KLF11, PAX4, BLK, GATA4, GATA6, SLC2A2 (GLUT2), RFX6, GLIS3
   b) Transient neonatal diabetes
   c) Diseases of the exocrine pancreas—pancreatitis, pancreatectomy, neoplasia, cystic fibrosis, hemochromatosis, fibrocalculous pancreatopathy, mutations in carboxyl ester lipase
   d) Genetic defects in insulin action, including type A insulin resistance, Leprechaunism, Rabson-Mendenhall syndrome, Lipodystrophy syndromes
   e) Endocrinopathies—acromegaly, Cushing's syndrome, glucagonoma, pheochromocytoma, hyperthyroidism, somatostatinoma, aldosteronoma
   f) Drug- or chemical-induced—glucocorticoids, vacor (a rodenticide), pentamidine, nicotinic acid, diazoxide, β-adrenergic agonists, thiazides, calcineurin and mTOR inhibitors, hydantoins, asparaginase, α-interferon, protease inhibitors, antipsychotics (atypical and others), epinephrine
   g) Infections—congenital rubella, cytomegalovirus, coxsackievirus
   h) Uncommon forms of immune-mediated diabetes—" stiff-person" syndrome, anti-insulin receptor antibodies.
   i) Other genetic syndromes sometimes associated with diabetes— Wolfram's syndrome, Down's syndrome, Klinefelter's syndrome, Turner's syndrome, Friedreich's ataxia, Huntington's chorea, Laurence-Moon-Biedl syndrome, myotonic dystrophy, porphyria, Prader-Willi syndrome
4. Gestational diabetes mellitus (GDM)

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Sign and symptoms-

Symptoms	**Signs**	**Causation**
Urinary symptoms Polyuria Nocturia Polydipsia Dysuria	Dehydration	Hyperglycaemia exceeds the capacity of the renal tubule to reabsorb glucose in the distal convoluted tubule and increased urinary glucose creates an osmotic diuresis, producing increased urine production. Urine volume and frequency are increased, and affected individuals can report nocturia. Increase in urine volume differentiates new onset diabetes from infection or causes of bladder outflow obstruction, although high glucose levels do predispose to increased risk of infection.
Polydipsia Thirst Dizziness on standing	Dehydration Resting tachycardia Postural hypotension	Increased plasma osmolality and fluid losses from recurrent osmotic diuresis cause thirst and increased fluid intake. Intracellular dehydration occurs as water moves out of cells into the hyperosmolar interstitial fluid and circulation. In the later stages of undiagnosed diabetes preceding diabetic ketoacidosis, the patient's intake may be insufficient to replace fluid losses, causing dehydration
Weight loss	Reduced body mass index Muscle loss Loss of subcutaneous and visceral fat	Common in weeks preceding diagnosis, due to dehydration and worsening catabolic state. Lipolysis and proteolysis occur with insulin deficiency. Although weight loss is common, average body weight at presentation is usually within the normal range.
Fatigue	Excessive somnolence	Increased urinary frequency, nocturia, fluid and muscle loss lead to increased lassitude.
Visual disturbance Blurred vision	Altered visual acuity (Retinal and macular changes should be excluded by examination)	Hyperglycaemia causes osmotic changes in the lens and chambers of the eye that alter refraction; reduction in ambient glucose that occurs with treatment restores fluid levels in the dehydrated eye chamber, correcting the refraction capacity of the lens
Musculoskeletal Leg pains, cramps	Muscle cramps, especially lower extremities	Excessive electrolyte loss with diuresis, altered carbohydrate, fat and protein metabolism, and subsequent ketosis formation can lead to cramping.

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Infection Skin infections Dysuria Genital soreness	Cellulitis Abscesses Otitis Externa Conjunctivitis Vaginal thrush Vulvovaginitis Balanitis Urinary tract/Genital infection	Increased glucose levels in body secretions encourage culture of bacteria, fungi, and viruses. Glucose levels should be tested in any individual presenting with significant skin or urogenital infection. Insulin deficiency may also have adverse effects on neutrophil function, and it is not uncommon for type 1 diabetes to present at times of infection as the stress response increases sympathetic activation, cortisol, and growth hormone release, all of which produce further hyperglycaemia.
Gastrointestinal symptoms Nausea Constipation (paediatric cases)	Oral and oesophageal candidiasis may complicate newly presenting type 1 diabetes.	Nausea and bloating result in physiological delay of gastric emptying with concurrent hyperglycaemia. Constipation noted in paediatric presentations, arising as a consequence of constipation from dehydration. Diarrhoea is rare, unless associated with coeliac disease at presentation
Diabetic ketoacidosis		
Extreme thirst Excessive polyuria Vomiting Hyperventilation Reduced consciousness	Dehydration Increased skin turgor Resting tachycardia Postural hypotension Sunken fontanelle (infants) Kussmaul breathing Coma	Fluid losses excessive due to osmotic effects of profound hyperglycaemia. Acute renal failure may be present, and hyperkalaemia occurs as potassium cannot be moved into cells with insulin insufficiency. Unrestrained lipolysis and ketone formation cause nausea and subsequently vomiting. Ketones are acidic, reducing plasma pH. Metabolic acidosis drives respiratory compensation and hyperventilation can ensue, producing a deep sighing respiration. The breath smells of ketones, likened to pear drops. Rising osmolality and reduction in plasma pH reduce consciousness; often a late sign of established ketoacidosis necessitating intensive care admission.

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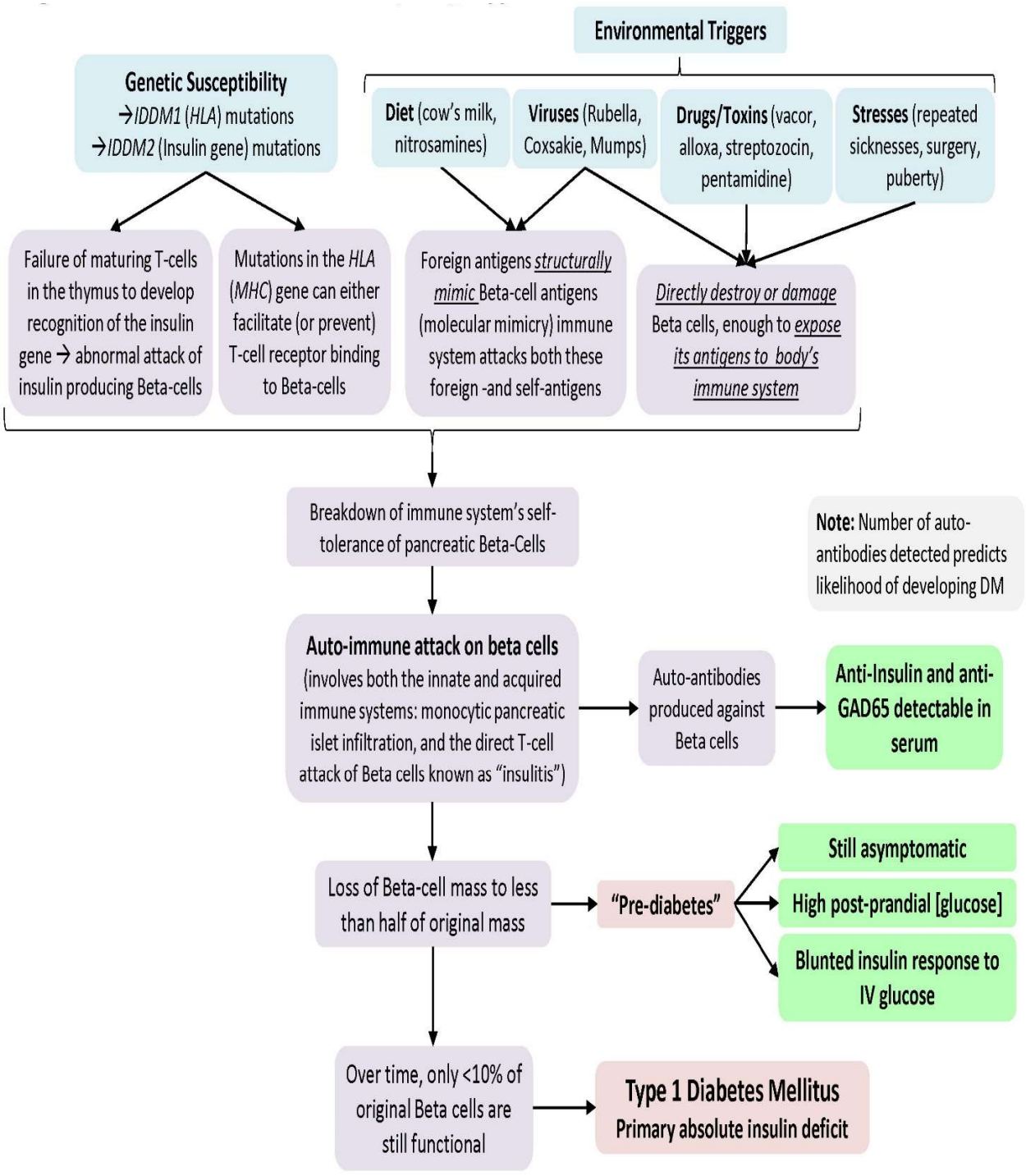
Type 1 Diabetes-

Type 1 diabetes is generally considered a T-cell-mediated autoimmune disease involving destruction of the insulin-secreting β cells in the pancreatic islets. It develops most commonly in childhood and adolescence.

Pathogenesis- The current model showing pathogenesis of Type 1 Diabetes Mellitus-



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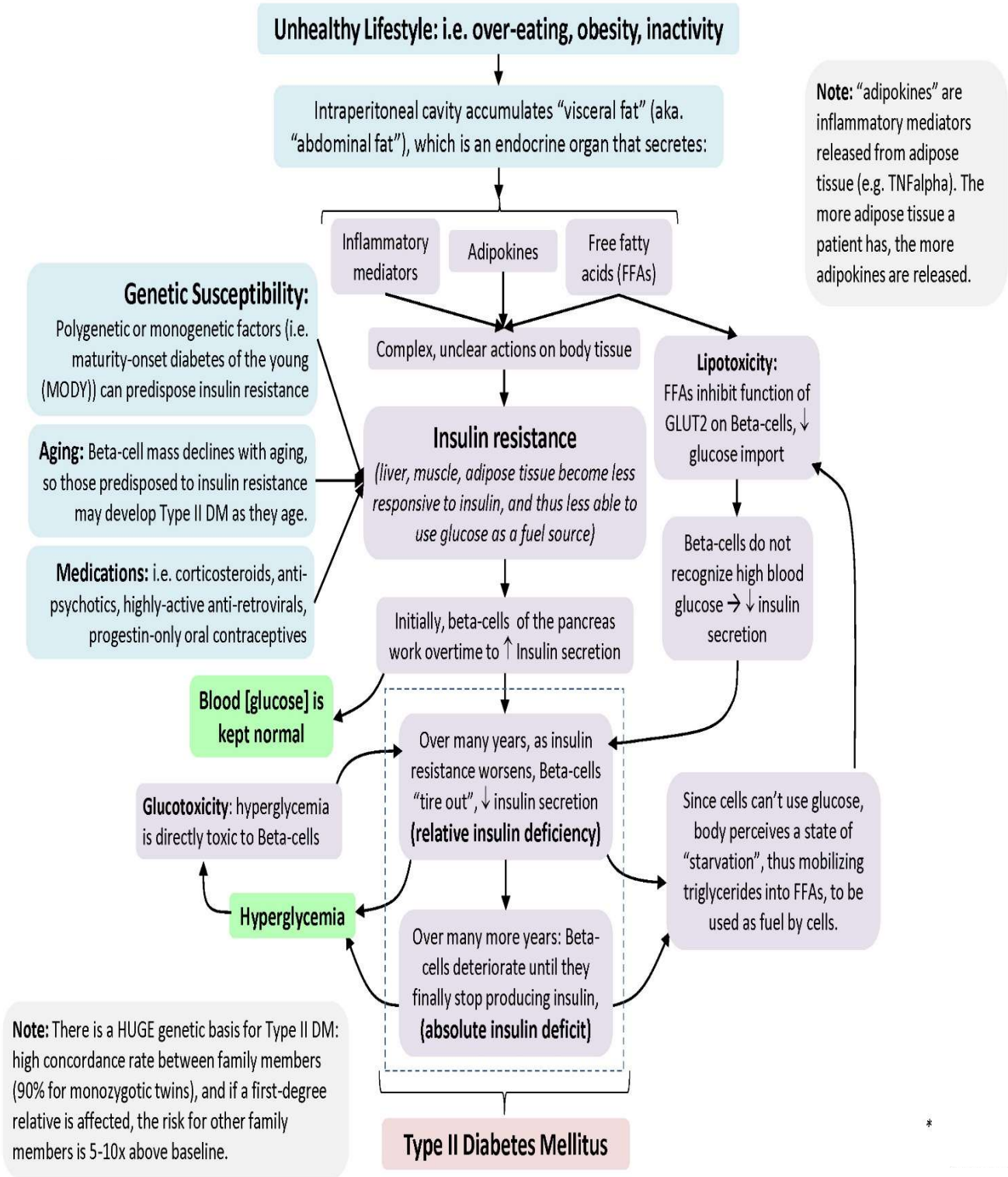
Type 2 Diabetes-

It is characterised by reduced sensitivity to the action of insulin and an inability to produce sufficient insulin to overcome this 'insulin resistance'.



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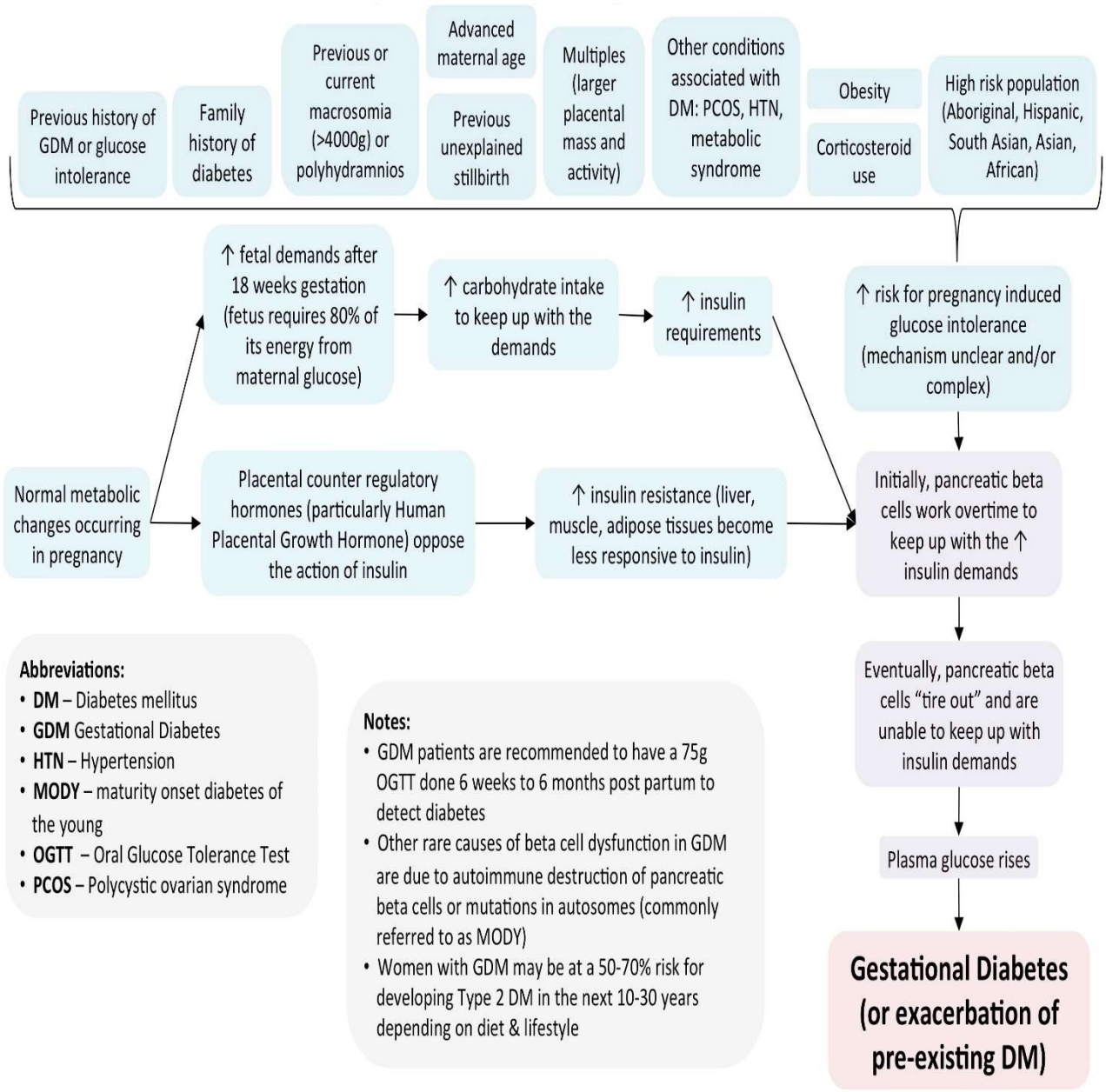
Gestational Diabetes Mellitus-

Gestational diabetes (GDM) is a form of diabetes that is first detected during pregnancy. It usually occurs in the second or third trimester, in women who were not known to be diabetic before pregnancy. There is no known specific cause, but it is believed that the hormones produced during pregnancy reduces receptivity to insulin, resulting in high blood sugar. Gestational diabetes mellitus (GDM) is similar to type 2 diabetes, a combination of relatively inadequate insulin secretion and reduced responsiveness to insulin occurs.



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COMPLICATIONS OF DIABETES MELLITUS

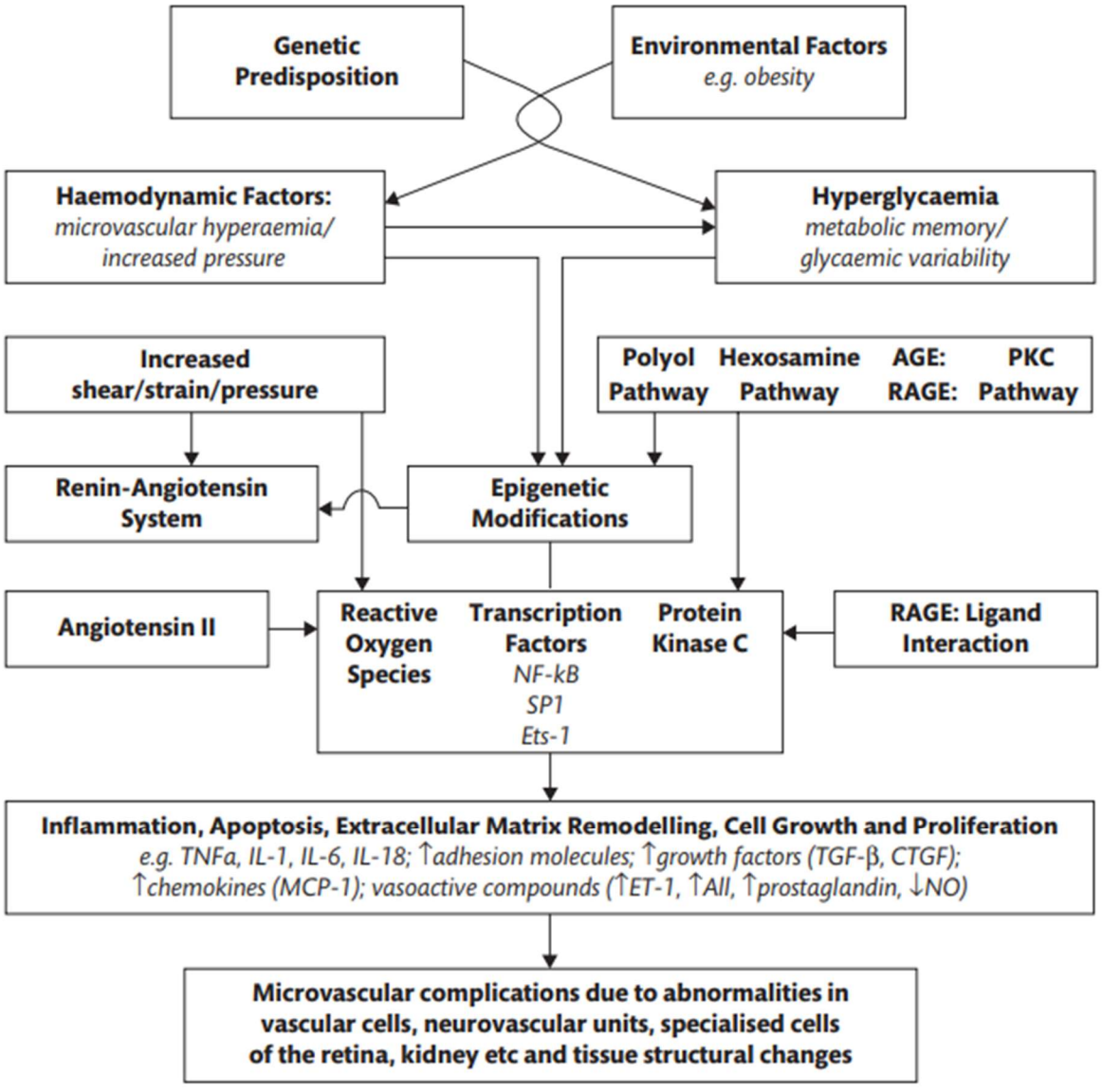
Microvascular Complications

Microvascular complications are traditionally thought of as those in the eye, kidney, and nerves.

The American Diabetes Association described diabetic retinopathy as a highly specific neurovascular complication involving progressive disruption of the interdependence between multiple cell types in the retina. These cells comprise endothelial cells, pericytes, or vascular smooth muscle cells, retinal glia including Müller cells and astrocytes, neuronal processes, and immune cells both microglia and macrophages.

Similarly diabetic neuropathy is due to the interactions of the direct effects of the diabetic milieu on the Schwann cell and the axon as well as the more indirect effects on these cells via altered microvascular perfusion; and in the kidney, mesangial cells, podocytes and renal tubules play important roles in diabetic nephropathy in addition to the cells of the vasculature.

The factors involve in the pathogenesis of microvascular complication-



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RETINOPATHY-

Diabetic retinopathy refers to the microvascular complication of diabetes with pathology of the capillaries, arterioles and venules in the retina and the subsequent effects of leakage from or occlusion of the small vessels.

Pathology –

1. Thickening of the basement membrane

2. Pericyte loss

3. Loss of epithelial tight junctions

4. Loss of endothelial cells

5. Smooth muscle cell death

6. Capillary weakening

7. Increased capillary permeability

8. Capillary occlusion

9. Microaneurysm formation—this has always been considered one of the earliest lesions in diabetic retinopathy and the hallmark of the condition.

Risk Factors-

Modifiable-

1. Systemic Hypertension
2. Glucose control
3. Hyperlipidaemia
4. Smoking

Non modifiable-

1. Duration of Diabetes
2. Age
3. Genetic predisposition
4. Ethnicity

Others –

1. Pregnancy
2. Renal Failure
3. The Early Worsening Phenomenon, in case of uncontrolled diabetes there is high risk of proliferative retinopathy.

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The ETDRS described the progression of diabetic retinopathy in relation to the development of the specific lesions, the most important of which were-

1. Microaneurysms (Ma)
2. Small retinal haemorrhages or dot haemorrhages
3. HMa (haemorrhage/microaneurysm)
4. Flame haemorrhages
5. Blot haemorrhages
6. Hard exudates—often just referred to as exudates (HE)
7. Cotton wool spots (referred to as soft exudates or SE in the ETDRS but this term is now rarely used)
8. Intraretinal microvascular abnormality (IRMA)
9. Venous beading (VB)
10. New vessels at the disc (NVD)
11. New vessels elsewhere (NVE)
12. Vitreous haemorrhage (VH)
13. Preretinal haemorrhage (PRH)

ETDRS Retinopathy Severity	Lesions
No apparent retinopathy	DR absent DR questionable
Mild NPDR	Micro aneurysms only One or more of the following: Venous loops > definite in 1 field SE IRMA, or VB questionable Retinal haemorrhages present HE > definite in 1 field SE > definite in 1 field
Moderate NPDR	H/Ma moderate in 4–5 fields or severe in 1 field or IRMA definite in 1–3 fields
Moderately severe NPDR	H/Ma moderate in 4–5 fields or severe in 1 field and IRMA definite in 1–3 fields or any one of the following: IRMA in 4–5 fields HMA severe in 2–3 fields VB definite in 1 field
Severe NPDR	One or more of the following: > 2 of the 3 level 47 characteristics H/Ma severe in 4–5 fields IRMA > moderate in 1 field VB > definite in 2–3 fields
Mild PDR	FPD or FPE present with NVD absent or NVE = definite
Moderate PDR	1) NVE > moderate in 1 field or definite NVD with VH and PRH absent or questionable or 2) VH or PRH definite and NVE < moderate in 1 field and NVD absent
High-risk PDR	Any of the following: 1) VH or PRH > moderate in 1 field

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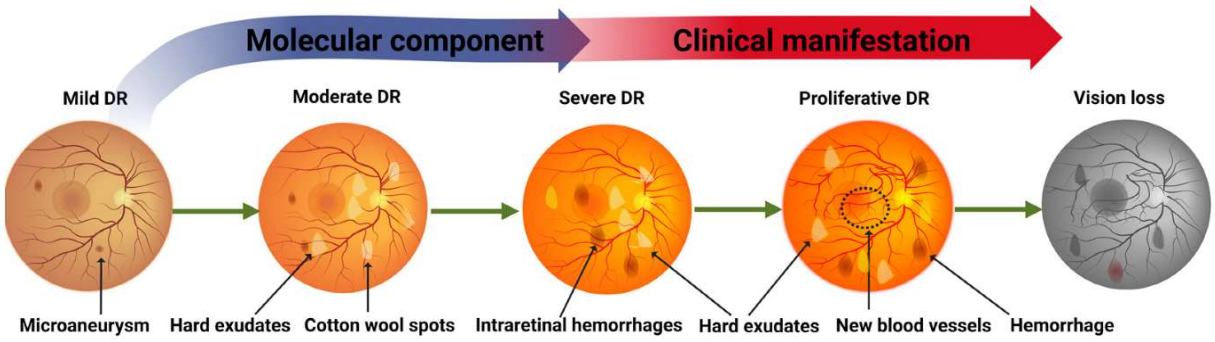
	2) NVE > moderate in 1 field and VH or PRH definite in 1 field 3) NVD = 2 and VH or PRH definite in 1 field 4) NVD > moderate
High-risk PDR	NVD > moderate and definite VH or PRH
Advanced PDR	Retina obscured due to VH or PRH



NEPHROPATHY-

Diabetic Nephropathy is defined as presence of albuminuria and progressive decline in glomerular filtration rate (GFR) associated with retinopathy and hypertension.

The stages of DN have been historically depicted as progression through increasing amount of albumin in the urine as A1 - normoalbuminuria, A2 - microalbuminuria, and A3 – macroalbuminuria, as a result of a damaged glomerular filtration barrier, until renal failure.

Pathology –

Classic Diabetic Nephropathy

The classical presentation of DN is characterized by specific glomerular and tubulointerstitial lesions.

Glomerulus –

1. Thickening of the glomerular basement membrane (GBM)
2. Diffuse mesangial sclerosis with accumulation of extracellular matrix and nodular formation (Kimmelstiel-Wilson lesion)
3. Hyalinosis
4. Glomerular capillary microaneurysms
5. Podocyte loss in the urine and progressive fall in filtration surface and decline in renal function

Tubular Compartment –

1. Tubular interstitial fibrosis with significant inflammatory infiltrates and occasional tubular atrophy.
2. Hyaline arteriosclerosis of renal vessels can be seen as a result of a vascular disease process that occurs from the early stages of DN.

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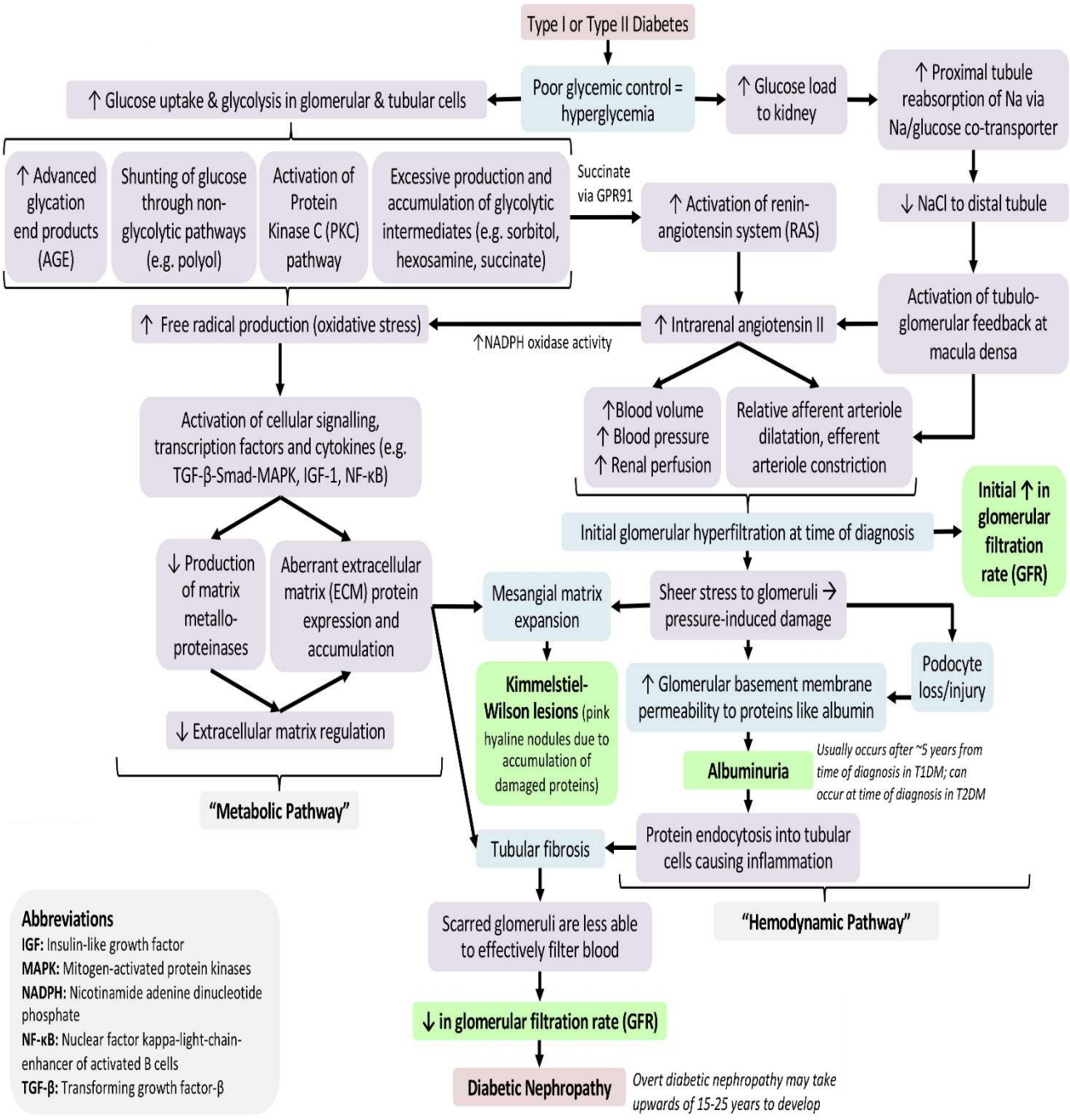
Non-Classic Diabetic Nephropathy

Disproportionate tubulointerstitial, glomerulosclerotic, and vascular changes.

Patients with albuminuria/proteinuria can present with mild diabetic glomerular changes but disproportionately severe vasculopathy, tubular atrophy, tubular basement membrane thickening, tubulointerstitial inflammatory infiltrate, and sclerosis.

Pathogenesis- The pathogenesis of Diabetic nephropathy is a complex process, and it is given in a simplified form for better understanding



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Risk Factor-

1) Non-Modifiable-
    a) Genetic predisposition to classical DN and the associated cardiovascular disease
    b) Different genes may influence disease initiation and progression, and separately affect the development of albuminuria and decline in GFR.
    c) Epigenetics
2) Modifiable-
    a) Glycaemia (increasing duration of diabetes and hyperglycaemia)
    b) Blood pressure
    c) Smoking
    d) Dyslipidaemia
    e) Obesity
    f) Insulin resistance
    g) Non-alcoholic fatty liver disease
    h) Sleep apnoea

Clinical Features-

Early Renal Abnormalities-

Hyperfiltration-

Whole-kidney hyperfiltration (GFR>120–140 ml/min) is common in newly-diagnosed T1DM and short-duration T2DM, kidney disease advances and nephron mass reduce, hyperfiltration occurs in the remaining nephrons.

Progression of DKD-

Microalbuminuria

Macroalbuminuria

Blood pressure and cardiovascular risk rise in parallel with increasing albuminuria and declining GFR.

Cardiovascular Disease and the Cardiorenal Syndrome-

Albuminuria and GFR < 60ml/min/1.73 m^2 are both independently and additively associated with increased all cause and cardiovascular mortality and cardiovascular events. Individuals with both increased albuminuria and decreased GFR have the highest risk.

Cardiorenal metabolic syndrome has been coined to describe the constellation of central obesity, insulin resistance, hypertension, dyslipidaemia and proteinuria and/or declining GFR.

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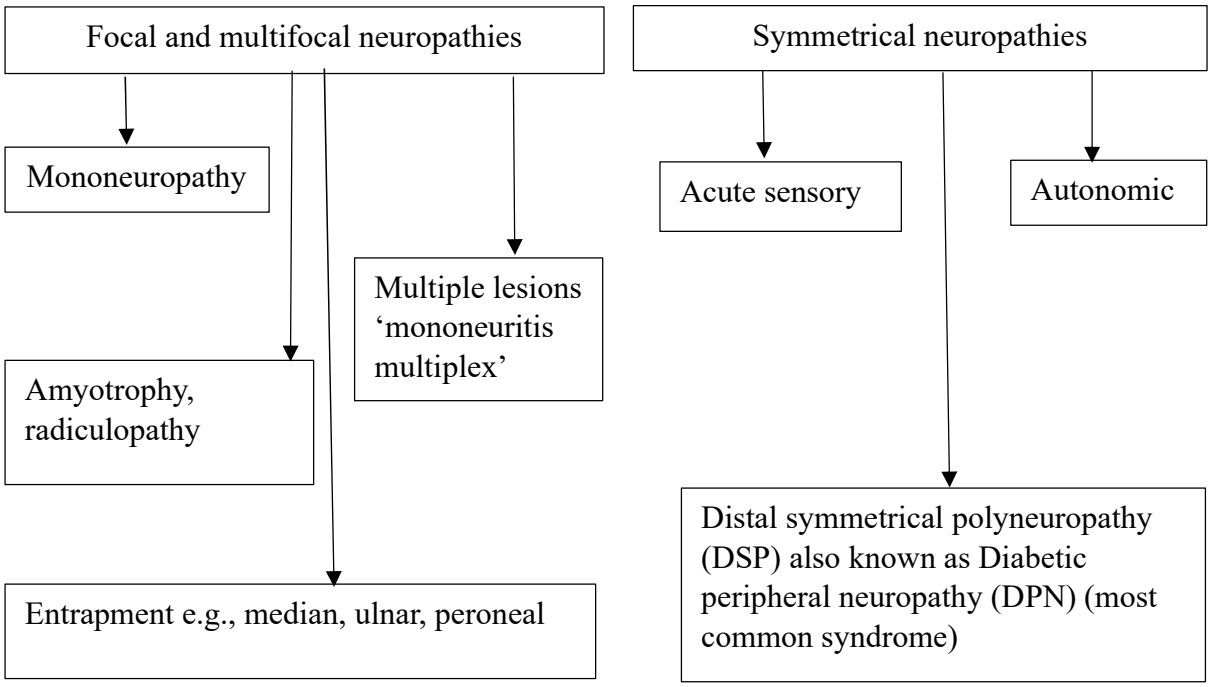
NEUROPATHY –

Diabetic neuropathy is a major complication of diabetes and a cause of considerable morbidity and mortality which includes several neuropathic syndromes. The commonest presentation of neuropathy is chronic distal symmetrical polyneuropathy (DSP) also known as diabetic peripheral neuropathy (DPN).

Neuropathic syndromes associated with DM-



Classification-

Polyneuropathies	Autonomic neuropathy	Focal neuropathies
1. Distal symmetrical polyneuropathy 2. Combined large and small-fibre neuropathy 3. Predominantly large-fibre neuropathy 4. Predominantly small-fibre neuropathy	1. Cardiovascular 2. Resting tachycardia 3. Sudden death 4. Exercise intolerance 5. Orthostatic hypotension 6. Foot vein distension and arteriovenous shunting 7. Gastrointestinal 8. Gastroparesis 9. Diarrhoea or constipation 10. Bladder hypomotility 11. Erectile dysfunction 12. Gustatory sweating 13. Reduced peripheral sweating	1. Mononeuropathies 2. Mononeuritis multiplex 3. Proximal motor neuropathy (amyotrophy) 4. Thoraco-abdominal neuropathy

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Diabetic Peripheral Neuropathy-

The Toronto Consensus Panel recently defined DPN as a symmetrical, length dependent sensorimotor polyneuropathy attributable to metabolic and micro vessel alterations as a result of chronic hyperglycaemia exposure (diabetes) and cardiovascular risk covariates.

There is a 'length-related' pattern of sensory loss, with sensory symptoms starting in the toes and then extending to involve the feet and legs in a stocking distribution. In more severe cases, there is upper limb involvement, with a similar progression proximally.

Symptoms-

The main clinical presentation of DPN is sensory loss, which the patient may not be aware of or may be described as 'asleep numbness' or 'dead feeling'. However, some may experience a progressive build-up of unpleasant sensory symptoms including tingling (paraesthesia or 'pins and needles)

- Positive symptoms
    1. Persistent burning or dull pain
    2. Paroxysmal electric, shooting, stabbing path
    3. Dysesthesias (painful paraesthesia's)
    4. Evoked pain (hyperalgesia, allodynia)
    5. Asleep numbness
- Negative symptoms (deficits)
    1. Hypoalgesia, analgesia
    2. Hypoesthesia, anaesthesia

Acute Painful Neuropathies-

Acute painful neuropathies are transient neuropathic syndromes characterized by an acute onset of pain (over weeks) in the lower limbs. They are relatively rare compared to chronic DPN. There are two distinct syndromes-

- Acute Painful Neuropathy of Poor Glycaemic Control
- Acute Painful Neuropathy of Rapid Glycaemic Control (Treatment-Induced Neuropathy of Diabetes—TIND)

Small-Fibre Neuropathy-

Symptoms-

1. Neuropathic pain, which may be severe, with relative sparing of large-fibre functions (vibration and proprioception)
2. Pins and needles (paraesthesia)
3. Contact hypersensitivity (allodynia)
4. Reduction in pinprick and temperature sensation, which are reduced in a 'stocking' and 'glove' distribution
5. Sparing of vibration and position sense (due to relative sparing of the large diameter Aβ fibres)
6. Erectile Dysfunction

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Asymmetrical Neuropathies-

Relatively rapid onset, and complete recovery is usual, predominantly affect middle aged/older patients and are more common in men.

Diabetic Amyotrophy-

The syndrome of progressive asymmetrical proximal leg weakness and atrophy, also been named as 'proximal motor neuropathy' or 'lumbo-sacral polyradiculopathy'

1. Wasting of the quadriceps and weakness
2. Hip flexors and hip abductors can also be affected
3. Thigh adductors, glutei, and hamstring muscles may be involved.
4. Knee jerk is usually reduced or absent
5. Weakness can lead to difficulty from getting out of a low chair or climbing stairs
6. Sensory loss is unusual

Cranial Mononeuropathies-

The commonest cranial mononeuropathy is the third cranial nerve palsy presenting with pain in the orbit, or sometimes with a frontal headache, Ptosis and ophthalmoplegia, pupil is usually spared.

Thoracoabdominal Neuropathy-

Diabetic thoracoabdominal neuropathy (truncal radiculopathy) is characterized by an acute onset pain in a dermatomal distribution over the thorax or the abdomen

1. Pain is usually asymmetrical
2. Local bulging of the muscle due to weakness.
3. Patchy sensory loss

Pressure Palsies-

Carpal Tunnel Syndrome-

Pain and paraesthesia in the hands, which sometimes radiate to the forearm and are particularly marked at night, clinical examination may reveal a reduction in sensation in the median nerve territory in the hands, and wasting of the muscle bulk in the thenar eminence

Ulnar Nerve and Other Isolated Nerve Entrapments-

The ulnar nerve is also vulnerable to pressure damage at the elbow resulting in wasting of the dorsal interossei, particularly the first dorsal interosseous.

Rarely, the patients may present with wrist drop due to radial nerve palsy after prolonged sitting or while unconscious during hypoglycaemia.

In the lower limbs the common peroneal (lateral popliteal) is the most commonly affected nerve resulting in foot drop. Entrapment neuropathy in lateral cutaneous nerve of thigh and phrenic nerve.

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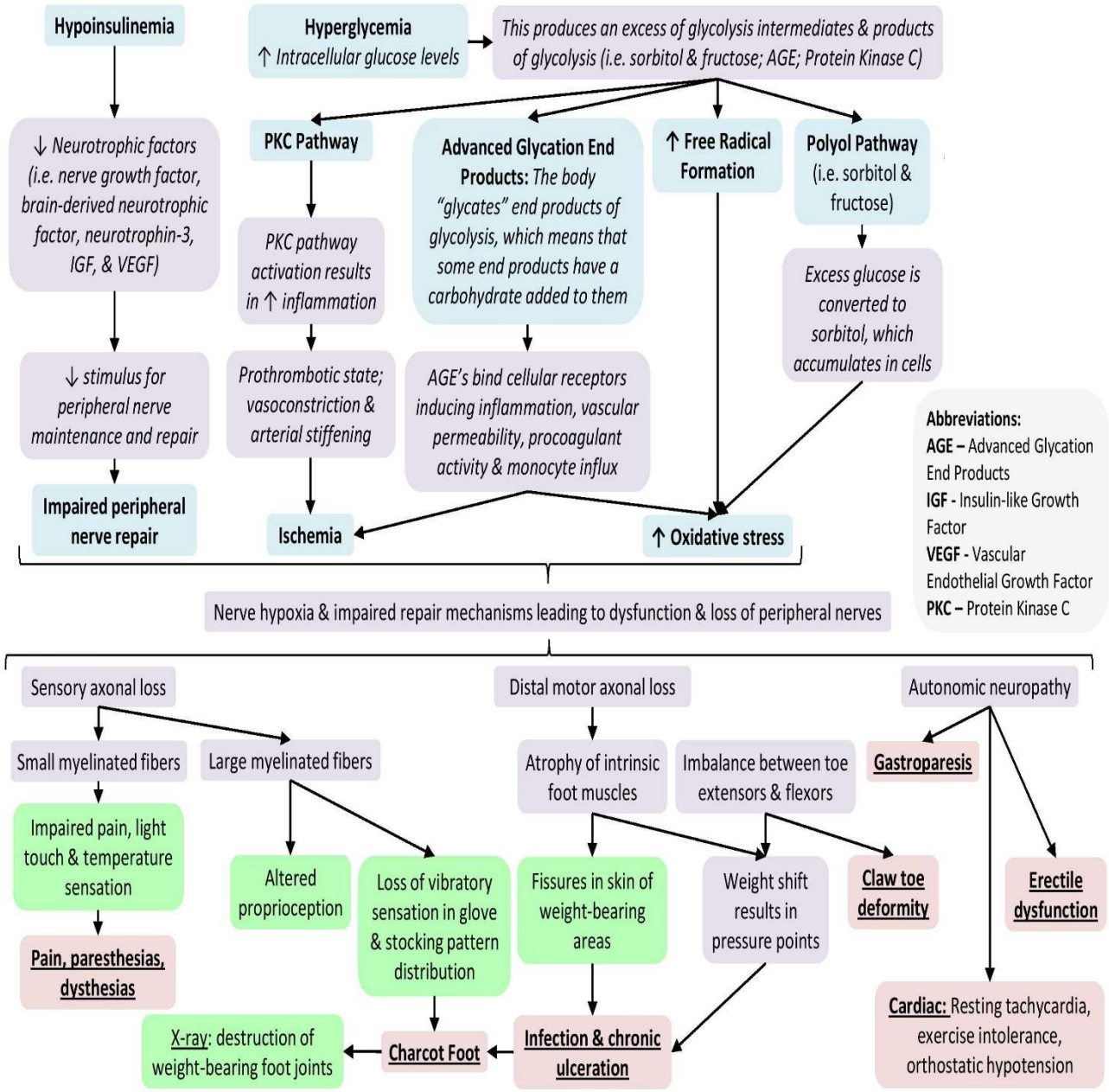
Pathogenesis- The pathogenesis of Diabetic Peripheral Neuropathy is-



Autonomic Neuropathy-

Autonomic neuropathy has a gradual onset and is slowly progressive.

Clinical consequences of autonomic neuropathy

1. Cardiac autonomic neuropathy
   a) Sudden death
   b) Silent myocardial ischaemia
   c) Exercise intolerance
   d) Orthostatic hypotension

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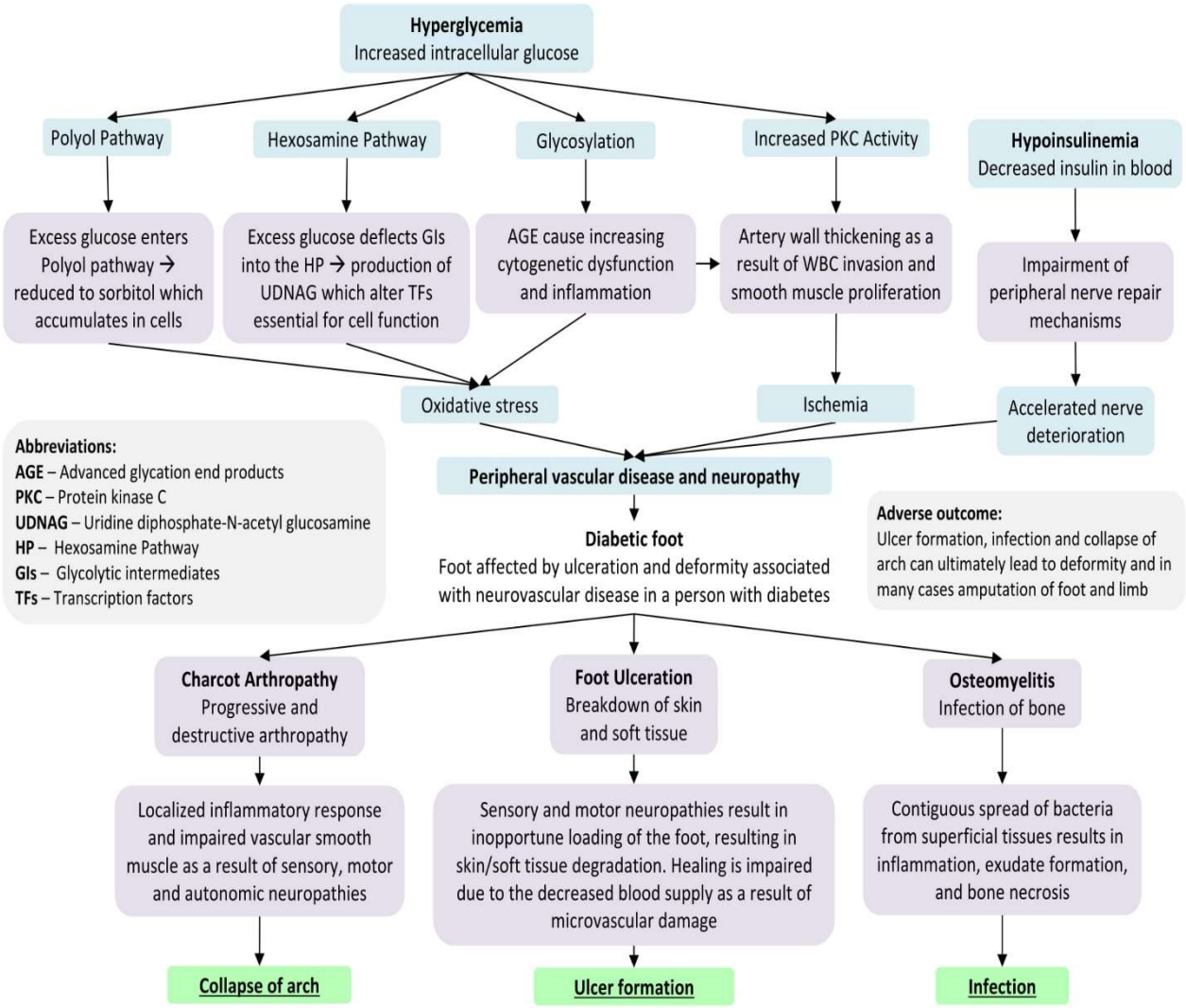
e) Foot vein distension/Av shunting
2. Gastrointestinal autonomic neuropathy
   a) Gastroparesis
   b) Diarrhoea or constipation
3. Bladder hypomotility — urinary incontinence/retention
4. Erectile dysfunction
5. Gustatory sweating
6. Reduced peripheral sweating

Diabetic Foot-

The late sequelae of diabetic neuropathy (DPN) include foot ulceration, Charcot neuroarthropathy (CN), and amputation: likewise, peripheral vascular disease (PVD) is a major aetiological factor in diabetic foot disease. DPN increases the risk of foot ulceration through the loss of protective sensation by a sevenfold increase when comparing to the non-diabetic population.



Acute Complications

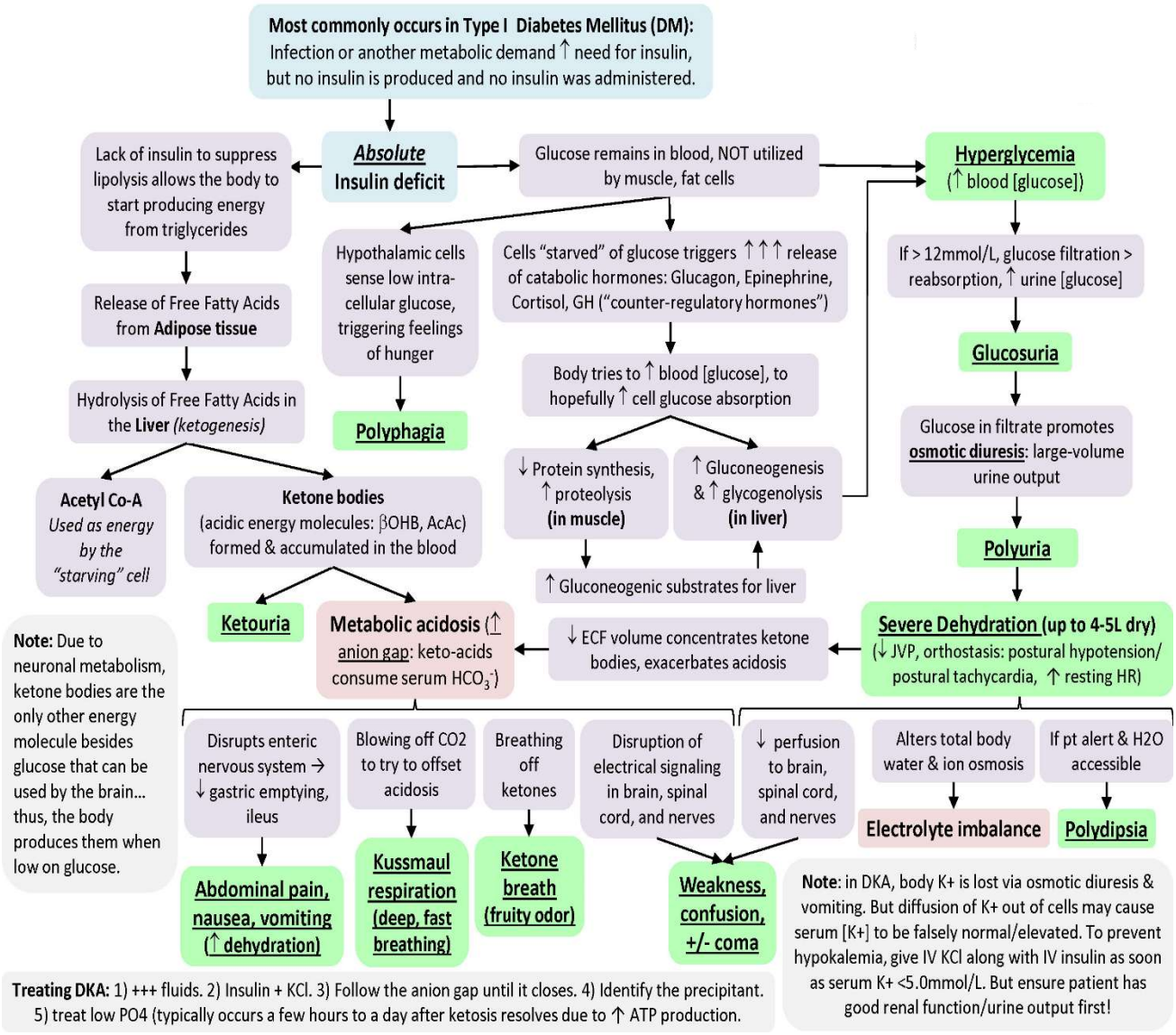
Diabetic Keto-Acidosis (DKA)-

Diabetic ketoacidosis (DKA) is a life-threatening complication in patients with untreated diabetes mellitus (chronic high blood sugar or hyperglycaemia). Near-complete deficiency of insulin and elevated levels of certain stress hormones combine to cause DKA. DKA is more common among type I diabetics, but may also occur in type II diabetics generally when physiologically stressed, such as during an infection.

Classification-

Parameters	Mild	Moderate	Severe
Plasma glucose (mg/dl)	>250	>250	>250
Arterial pH	7.25 - 7.30	7.0 - 7.24	<7.0
Serum bicarbonate (mEq/L)	15-18	10-15	<10
Anion gap	>10	>12	>12
Sensorium	Alert	Alert / drowsy	Stupor / coma

Pathogenesis-



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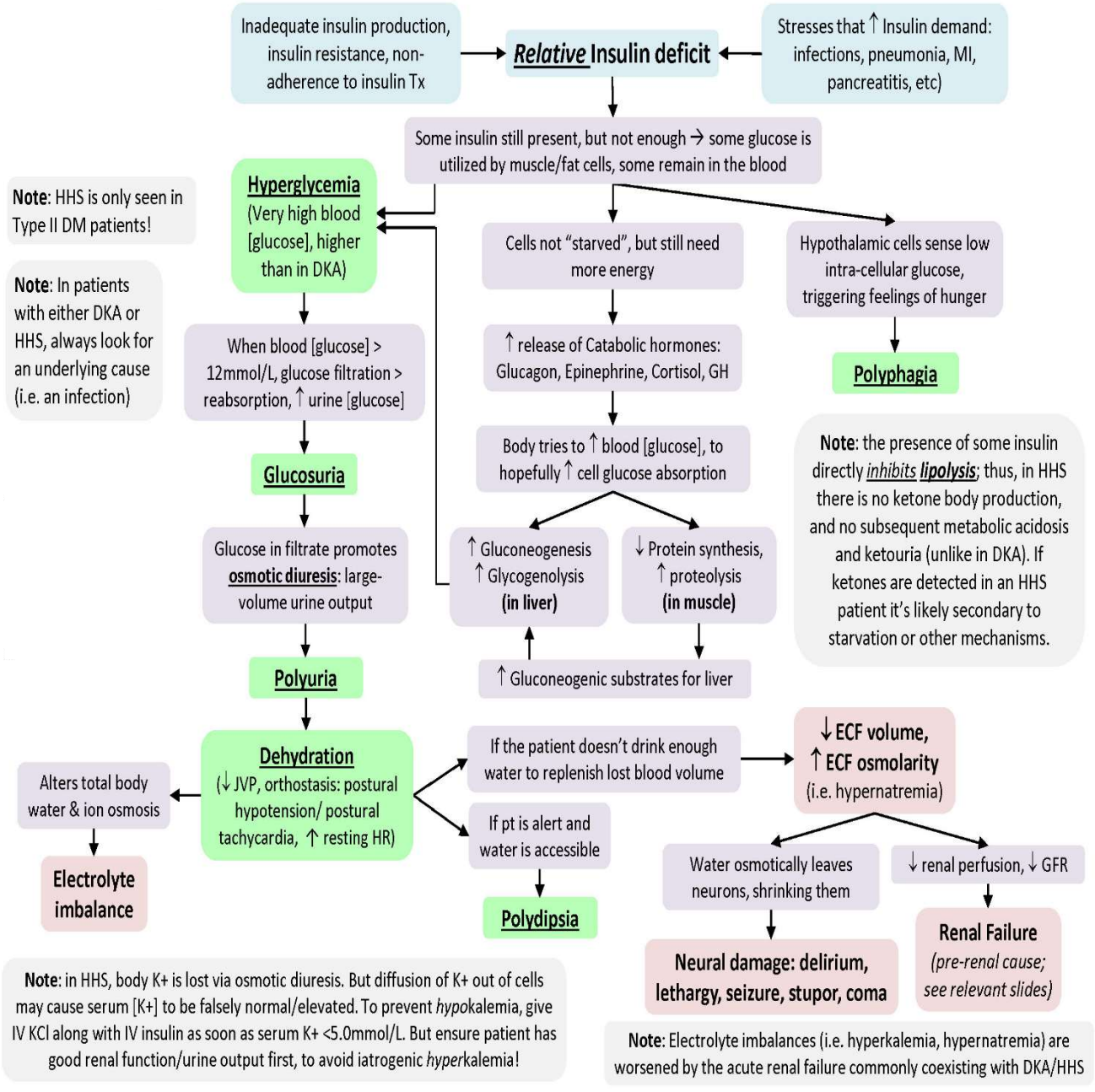
Hyperosmolar Hyperglycaemic State (HHS)-

It is a condition characterized by severe dehydration, hyperglycaemia in the absence of ketoacidosis, and hyperosmolarity.

Parameters	Levels
Plasma glucose (mg/dl)	>600
Arterial pH	>7.30
Serum bicarbonate (mEq/L)	>15
Anion gap	<12
Sensorium	Stupor/Coma

Pathogenesis-



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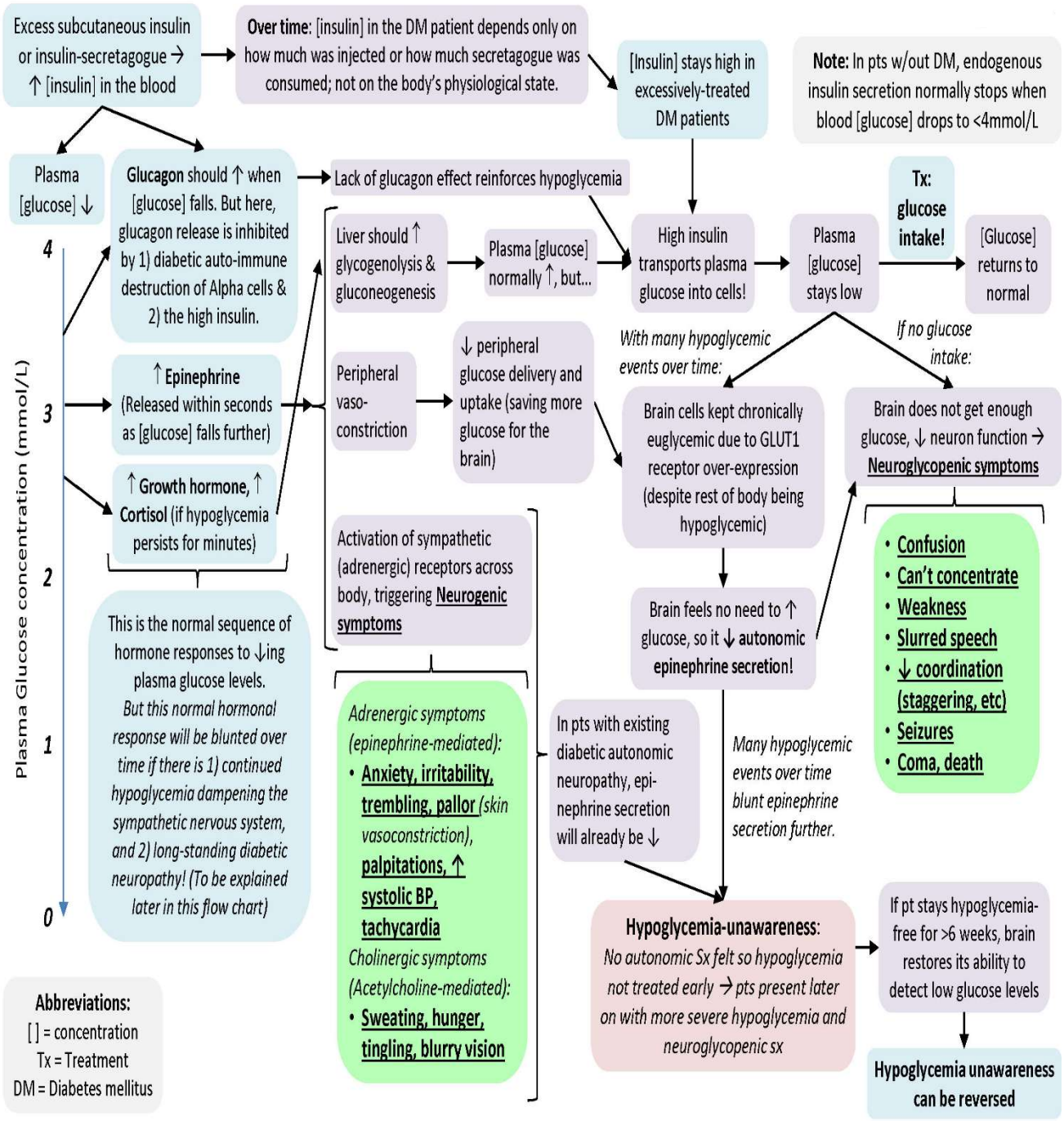
Hypoglycaemia-

Hypoglycaemia is most commonly caused by drugs used to treat diabetes mellitus or by exposure to other drugs, including alcohol.

It may be documented by Whipple's triad:

1) Symptoms consistent with hypoglycaemia.
2) A low plasma glucose concentration measured with a precise method.
3) Relief of symptoms after the plasma glucose level is raised.

Pathogenesis –



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Causes of Hypoglycaemia in Adults

- Ill or Medicated Individual
    1. Drugs Insulin or insulin secretagogue Alcohol Others
    2. Critical illness Hepatic, renal or cardiac failure Sepsis Inanition
    3. Hormone deficiency Cortisol Growth hormone Glucagon and epinephrine (in insulin-deficient diabetes)
    4. Non–islet cell tumor (e.g., Mesenchymal tumors)
- Seemingly Well Individual
    5. Endogenous hyperinsulinism
        a. Insulinoma
        b. Functional β-cell disorders (nesidioblastosis)
            1. Noninsulinoma pancreatogenous hypoglycaemia
            2. Post–gastric bypass hypoglycaemia
        c. Insulin autoimmune hypoglycaemia
            1. Antibody to insulin
            2. Antibody to insulin receptor
        d. Insulin secretagogue
        e. Other
    6. Disorders of Gluconeogenesis and fatty acid oxidation.
    7. Exercise
    8. Accidental, surreptitious, or malicious hypoglycaemia

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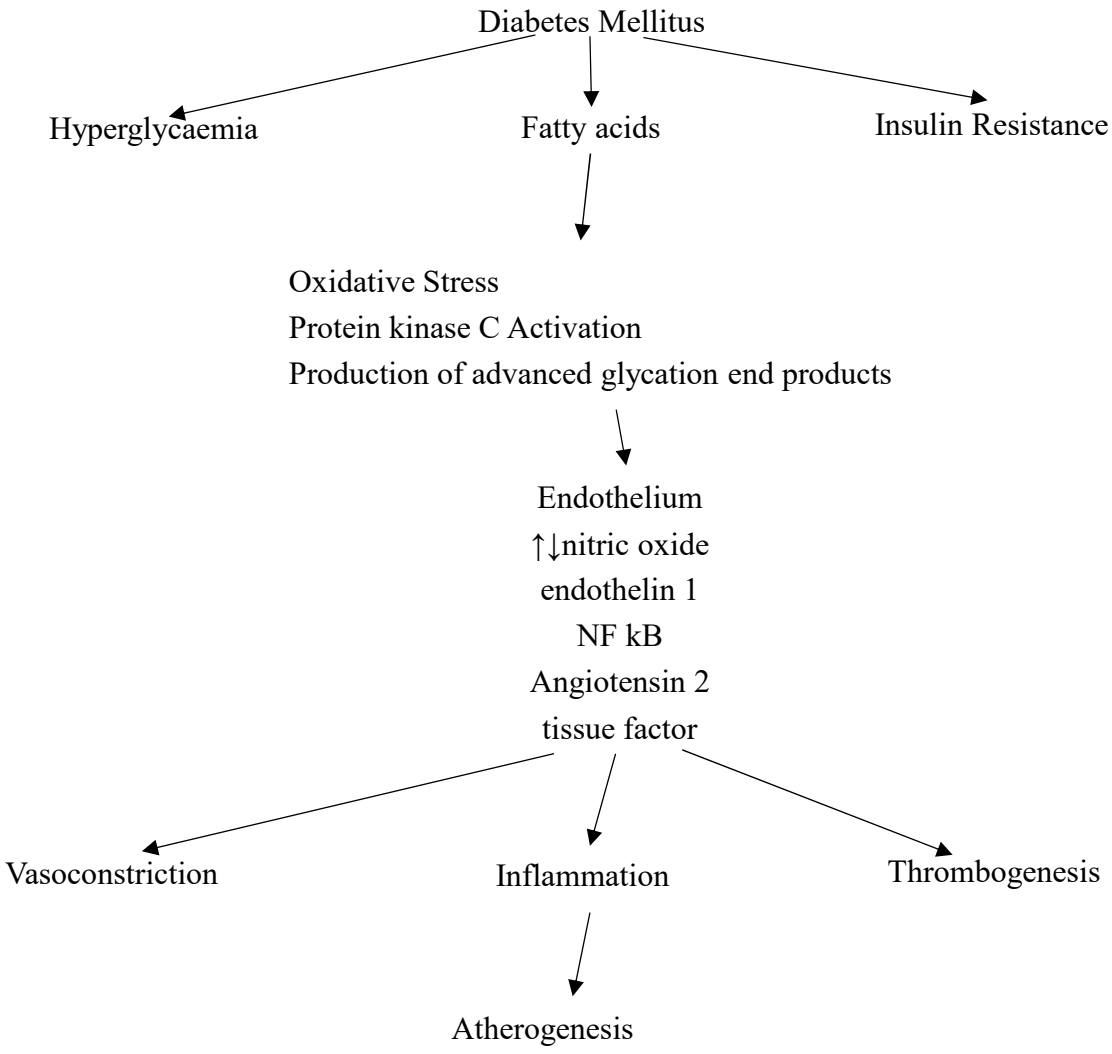
Macrovascular changes

Diabetes-related complications affect many organ systems and are responsible for the majority of morbidity and mortality associated with the disease. The macrovascular complication of DM is –

1. Coronary Heart Disease
2. Peripheral Artery Disease
3. Cerebrovascular Disease

Coronary Heart Disease (CHD)-

In diabetes, the combination of hyperglycaemia, free fatty acid excess, and insulin resistance leads to several systemic effects, including increasing oxidative stress, protein kinase C, and production of advanced glycation end products. The activation of these systems impairs endothelial function, through the decreasing of nitric oxide and prostacyclin and the increasing of endothelin 1, NF-κB, angiotensin II, and tissue factor. These pathways cause vasoconstriction, increase inflammation, promote thrombosis, and, thus, contribute to atherogenesis.



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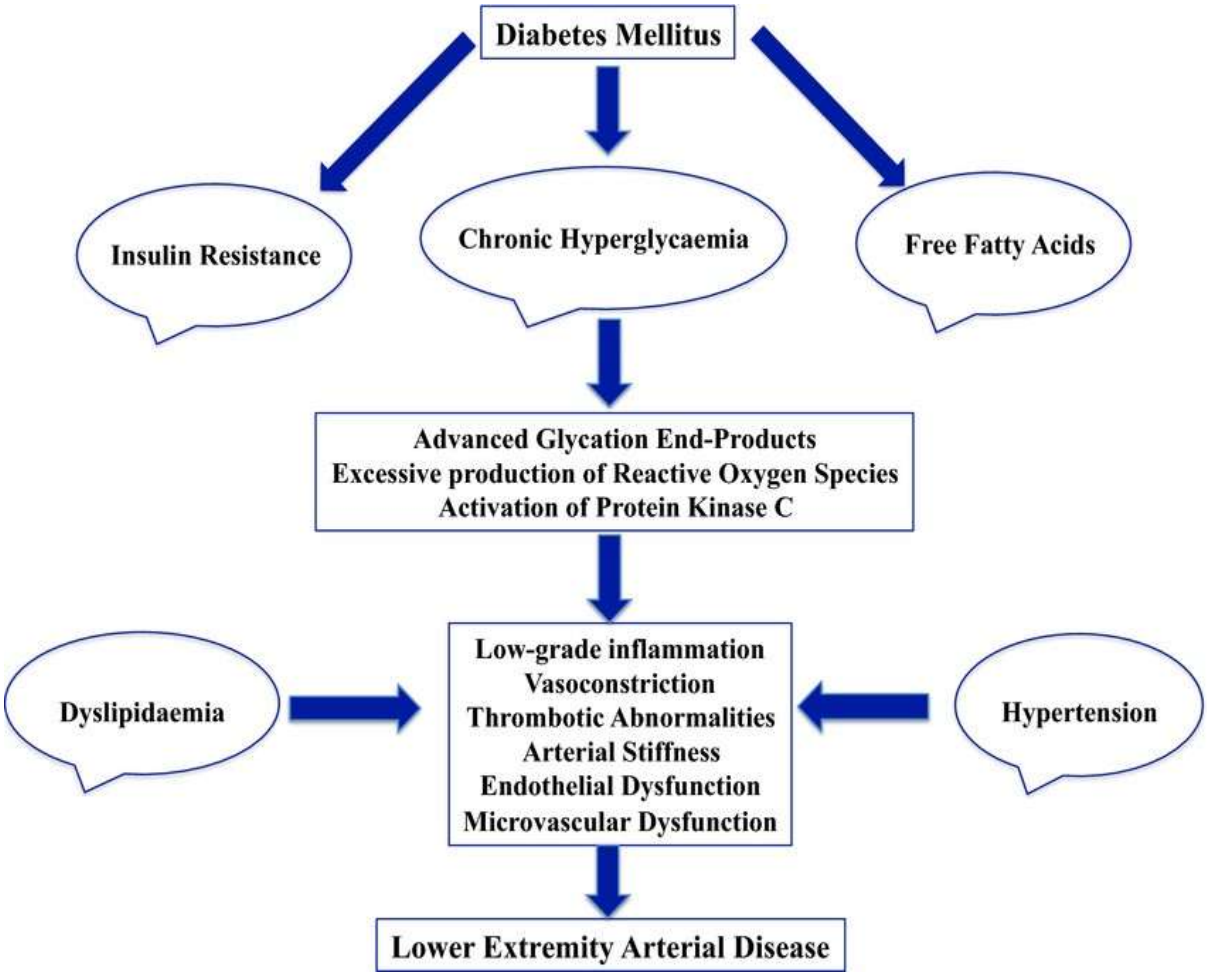
Peripheral Artery Disease-

Peripheral vascular disease (PVD) includes peripheral arterial disease (PAD) and venous disease. PAD is a chronic progressive atherosclerotic disease leading to partial or total peripheral vascular occlusion. Diabetes is one of the most common causes of PAD.

Peripheral vascular disease can affect several systems in the body leading to a number of complications as:

- Acute coronary syndrome
- Stroke
- Nonhealing ulcer
- Gangrene
- Amputation
- Deep vein thrombosis
- Erectile dysfunction

Pathogenesis -



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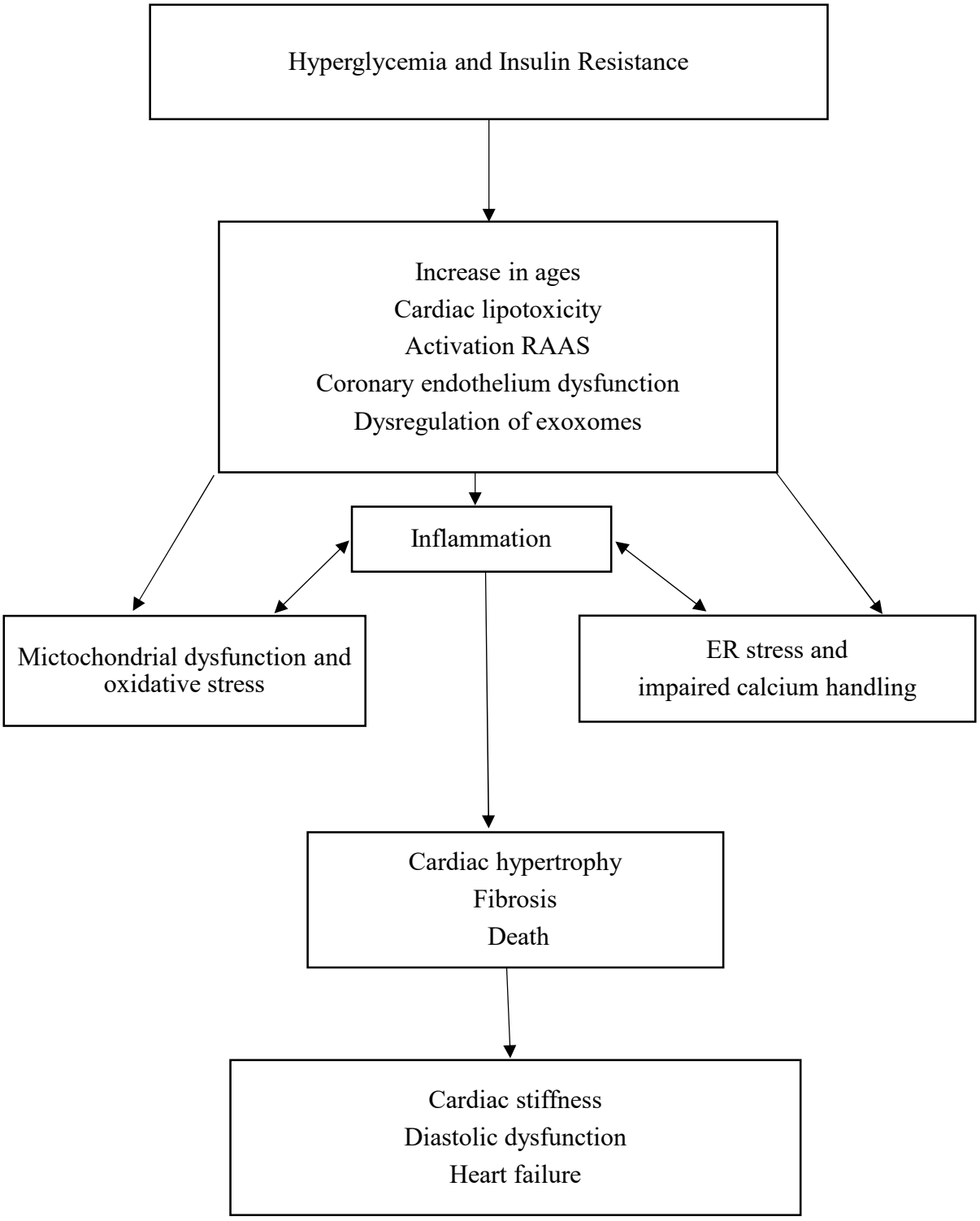
Cardiovascular disease-

Hyperglycaemia and insulin resistance induce increases in AGEs, cardiac lipotoxicity, activation of the RAAS, coronary endothelial dysfunction and dysregulation of exosomes, which, in turn, result in mitochondrial dysfunction, oxidative stress, ER stress and impairment of calcium homeostasis. These pathophysiological abnormalities are associated with cardiac hypertrophy, fibrosis, death, stiffness, diastolic dysfunction and heart failure.



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Differential Diagnosis

The list of differential diagnosis of diabetes mellitus consists of various conditions that would exhibit similar signs and symptoms:

- Drug-induced signs and symptoms due to corticosteroids, neuroleptics, pentamidine, etc.
- Genetic aberrations in beta-cell function and insulin action
- Metabolic syndrome (syndrome X)
- Infection
- Endocrinopathies such as acromegaly, Cushing disease, pheochromocytoma, hypothyroidism, etc.
- Complications of iron overload (hemochromatosis)
- Conditions affecting the exocrine part of the pancreas such as pancreatitis, cystic fibrosis, etc.

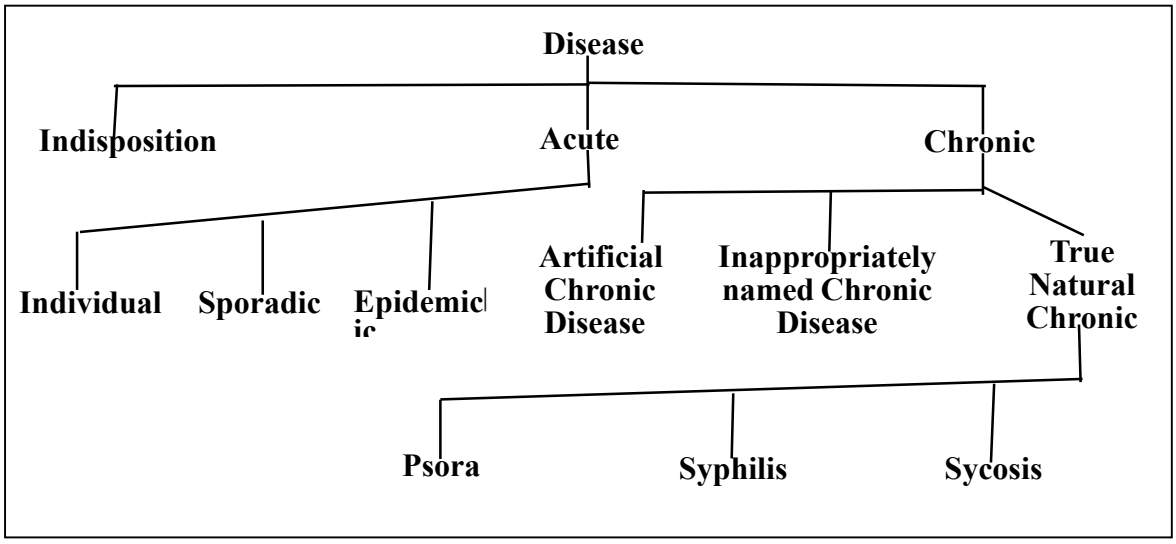
HOMOEOPATHIC MANAGEMENT

In order to understand a disease in homoeopathic perspective, firstly we have to comprehend the concept of health and disease, that is stated by our master Hahnemann and other stalwarts of homoeopathy.

Our master has quite easily stated about the vital principle that animates our material body, as well as each cell and organs, thereby all the vital functions of our body is carried in a harmonious way. Thus, by this dynamic influence the healthy state is achieved. Whenever there is any derangement of that dynamic influence occurs, disease is produced, by morbid signs and symptoms.

So, for further understanding of the disease we can classify disease as per Organon of Medicine.

Classification as per organon of medicine-



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Now to understand Diabetes Mellitus, from the same classification, we can clearly comprehendthat it's a true natural chronic disease (aphorism 78) which arises from a chronic miasm. A homoeopath has to consider not only the signs & symptoms of the disease, but all the symptomatology of the diseases and to observe any uncommon peculiarity in relation to location, sensation, modality, concomitant etc. All the modifying, exciting and maintaining factors are to be searched out, if any. It's the man who is sick. Each individual representative of DM carries individual peculiarities and completeness in their symptoms.

In the words of Dr Samuel Hahnemann it is "In this search for a homoeopathic specific remedy, that is to say, in this comparison of the collective symptoms of the natural disease with the list of symptoms of known medicines, in order to find among these an artificial morbific agent corresponding by similarity to the disease to be cured, the more striking,singular, uncommon and peculiar (characteristic) signs and symptoms of the case of disease are chiefly and most solely to be kept in view; for it is more particularly these that very similar ones in the list of symptoms of the selected medicine mustcorrespond to, in order to constitute it the most suitable for effecting the cure"(§153).

Miasmatic analysis-

Miasms are foundation of chronic disease, and from the very definition of Diabetes Mellitus it's understood that it's a true natural chronic disease. A miasmatic state is due to socio-economic, cultural, genetic, and environmental influences on the human body. Different miasms take an active part in the development of the disease and basically most of the diseases are now of multi miasmatic in origin, however, many authorities claim that many diseases are of single miasmatic origin that is, sycosis or syphilis or psora mightbe the only and single miasm behind those disease conditions. It is arguable that whether most of the diseases are developed of single or multi miasmatic origin.Again, it is to be understood that the patient's miasmatic background, constitution andtemperament will ultimately decide that what type of disease might occur in that individual patient's life span. It is solely based on patient's individualization.

Every miasm has its own identity and characteristics. To understand the basic nature of each misam in brief we can quote the words of H.A.Roberts, where he said 'the accentuation of Psora is functional, the accentuation of the Syphilitic taint is ulcerative; the accentuation of Sycosis is infiltration and deposits". Dr. J.N.Kanjilal also gave a basic idea of the main three miasms under the following headings.

Chronic Miasms	Psora	Sycosis	Syphilis
Basic Nature	Functional disorders by Hypersensitivity, itching & irritation.	Incoordination	Destructive
Psychic Sphere	Sensitizing miasm withsubjective manifestations. Hypersensitive.	Incoordination that leads to ANS & CNS disturbances.	Little subjective feeling.No mercy, sympathy, affection.

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	Hyperactive. Full of ideas yet no tendto materialize. Sterile philosopher.		Cold-blooded.
Sensorial Sphere	Vertigo of all types of modalities. Abnormal or excessive reactions.	Vertigo on closing the eyes.	Vertigo, reeling due toorganic destruction.
Metabolic Sphere	Has excessive demandsfor all the supplies ofnature, food, air, water. Craving for sweet-inability to digest. Craze for open air-butcan't stand it.	General metabolism disturbed- leads to dwarfism, emaciation, anemia, lymphatic disorder, endocrinal disorders.	Disturbs metabolism of minerals. Dwarfism, anemia, emaciation, defective bone, teeth formation.
Vegetative Sphere	Tendency to emaciation& overgrowth. Disturbance in water metabolism. Dryness in skin and mucus membrane.	Incoordination of the whole metabolism.	Deficient growth frombrain to bone. (Rickets, osteomalacia, microcephaly)
Pace of action	Hyperactive or even dramatic.	Slow, insidious & generally silent suppressive.	Moderate in its pace,sometimes rapid sometimes slow.
Embryonic Layers	Ectodermal origin.	Endodermal origin.	Mesodermal origin.

Diabetes Mellitus is a tri - miasmatic disease which may be psora syphilitic, psoric, Psora - :sycotic. S. Hahnemann mentioned DM as whitish urine with sweetish smell and taste, passes off in abundance, with prostration, emaciation, and inextinguishable thirst under PSORA. Stuart Close, Dr. Dhawle, Phyllis Speight, Dr. H.A. Roberts, and Dr. Harimohan Choudhary discourses that DM is the combination of Psora and Syphilis. Moreover, Dr. R.P. Patel narrated it is a mixed Miasmatic disease. Dr. Proceso S. Ortega says about degenerative disorders and miasms, which in every established Diabetes the Homoeopath can always detect a Psora-sycosis or a Psora-syphilis, just as he can in many chronic diseases.

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Reportorial Representation-

Kents Repertory-

Urine

SUGAR : *Acet-ac.,* all-s., alumn., am-c., aml-n., *arg-m., ars., benz-ac.,* **Bov.**, *calc-p., calc.,* camph., *carb-ac., carb-v., chel.,* chin-a., *chin.,* coff., *colch.,* conv., cupr., *cur., elaps., ferr-m.,* **Helon.**, *hep., iris., kali-chl.,* kali-n., *kali-p., kreos., lac-d., lach., lact-ac., lec.,* lith., **Lyc.**, *lycps.,* lyss., mag-s., *med.,* morph., mosch., *nat-s., nit-ac.,* op., petr., **Ph-ac.**, **Phos.**, *pic-ac.,* **Plb.**, *podo., rat.,* sal-ac., sec., *sil., sul-ac., sulph.,* **Tarent.**, **Ter.**, *thuj.,* **Uran.**, zinc.

Boericke's Repertory-

DIABETES, Sugar -- *Acet. ac.*, *Adren.*, Am. acet., *Arg. m.*, Arg. n., Aristol., Arn., *Ars. br.*, Ars. iod., *Ars.*, Asclep. vinc., *Aur.*, Aur. mur., Bell., *Bor. ac.*, Bov., *Bry.*, Caps., Carb. ac., Ceanoth., *Cham.*, Chel., *Chimaph.*, *Chionanth.*, *Coca.*, *Cod.*, Colch., *Crot.*, Cupr. ars., *Cur.*, Eup. purp., Fel tauri, Ferr. iod., Ferr. mur., Fluor. ac., Glon., Glycerin, Grind., *Helleb.*, *Helon.*, Iod., *Iris*, Kali acet., Kali br., *Kreos.*, Lach., *Lact. ac.*, Lecith., Lycop., Lyc., Lyssin, Morph., *Mosch.*, Murex, Nat. m., *Nat. s.*, Nit. ac., Nux v., *Op.*, *Pancreat.*, Phaseol., *Phos. ac.*, *Phos.*, Phlorid., Picr. ac., Plumb. iod., Plumb., Pod., *Rhus ar.*, Scilla, Sec., *Sil.*, *Sizyg.*, Strych. ars., Sul., Tar. h., Tarax., Tereb., *Uran. n.*, Urea, Vanad.

Assimilative disorders -- Uran n.
Gastrohepatic origin -- *Ars. iod.*, Ars., Bry., Calc. c., Cham., Chel., Kreos., *Lact. ac.*, Lept., Lyc., *Nux v.*, *Uran n.*
Nervous origin -- Ars., Aur. mur., Calc. c., *Ign.*, *Phos. ac.*, Strych. ars.
Pancreatic origin -- Iris., Pancreat., Phos.
Concomitant

Debility [with] -- Acet. ac., Op.
Gangrene, boils, carbuncles, diarrhœa [with] -- Ars.
Gouty symptoms [with] -- *Lact. ac.*, *Nat. s.*
Impotency [with] -- Coca, Mosch.
Melancholia, emaciation, thirst, restlessness [with] -- Helon.
Motor paralysis [with] -- Cur.
Rapid course [with] -- Cur., Morph.
Ulceration [with] -- Sizyg.

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THERAPEUTICS

Abroma augusta

It is an excellent remedy where the quantity of sugar is excessive and the urine is loaded with high specific gravity: Patient passes large quantity of clear urine at night, excessive thirst, insomnia and prostration are other marked features. Patient is averse to do any physical or mental labor.

Acetic acid

Abundant sugar in urine, increased and light-colored, great thirst, but cold drink lies heavy on stomach; ascites and hydrothorax, oedema pedum; gangrenous ulcers; pale, waxen skin; extreme prostration; decomposition of animal matter.

Argentum met

Profuse, turbid, sweetish urine; aggravation at night, sometimes like whey, it distresses him at night, has to rise so often; emaciation and great weakness; face pale and sallow, scrotum and feet oedematous and itching; foetid taste in mouth; disposition to gangrene.

Argentum nitricum

Diabetes of nervous and gastric origin in patients who are mentally and physically exhausted. Dried emaciated persons due to long continued mental work. Craving for sweets. Nervous, impulsive, want to do things in a hurry. Intolerance of heat. Dyspepsia, belching accompanies all gastric complaints. Profuse urination, impotence, irregular blotches over the skin.

Arnica montana

Arnica montana causes dryness in the mouth, with considerable thirst; a frequent desire to urinate, with a copious emission of pale urine; deglutition is prevented from an inordinate dryness of the mouth. Diabetes has been known to follow a blow on the liver. The Arnica, in such case, would be a suitable remedy.

Arsenicum album

Hepatic origin of diabetes due to chronic alcoholism. Horrible thirst, emaciation and exhaustion with hallucination, tendency to boils, pruritus vulvae skin dry, emaciation and great mental and physical restlessness. Diabetic gangrene. Neuropathy – The patient complains of burning pains especially in the palms and soles which are better by heat. Neuralgias and multiple neuritis. Also useful in carbuncles and gangrene with cadaverous odor and burning pains which are better by heat. Ulcers on toes and soles with wooden feeling in soles. Dry rough scaly skin. Chilly patients. Dry tongue and mouth with intense thirst but can only drink a little at a time. Increased quantity of urine with great burning while passing urine. Urine contains albumin.

Arsenicum bromatum

Dr Anshutz recommends it in both Diabetes mellitus and Diabetes inspidus, with loss of weight, burning thirst. Mixed diet with meat is recommended.

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Berberis vulgaris

Constant urging, with pain in neck of bladder, urine very slow to flow, with pain in lumbar and renal region, amelioration by rest; after urinating sensation in bladder as if one must go again soon or as if some urine remained behind; pale-yellow urine, with a gelatinous sediment; weakness of sexual organs; pale, sallow face, sunken cheeks; sickly expression; dryness and sticky feeling in mouth and fauces; sticky, frothy saliva, like cotton; increased thirst and appetite, amelioration by eating; pulse slow and weak; paralyzed, bruised sensation in back, aggravation from slight exertion; skin sticky and scaling off; intense coldness of knees.

Bovista

Frequent desire to urinate, even immediately after urination, with emission of a few drops; urine bright-red or yellowish-green, becomes turbid; bright yellow, with slowly forming cloud; turbid, like loam-water, with violet sediment; general languor and enervation, particularly in joints; visible palpitation after exertion, as if the heart were working in water; backache, with stiffness after stooping; urticaria.

Bryonia alba

No other remedy has such dryness of the lips as a symptom of hepatic disorders as Bryonia has, and this is often one of the first symptoms of diabetes. There is a persistent bitter taste in mouth. Patient is languid, morose, dispirited. Patient emaciates and may lose strength due to inability to eat.

Calcarea phos

Glycosuria when lungs are implicated, diminishing the quantity of urine and lowering its specific gravity; sore aching in bladder, aggravation after urinating, involuntary sighing; chronic cough of consumptives, who suffer with cold feet; profuse sweat in phthisis.

Carbolic acid

Short, dry, hacking cough; excessive urination, the urine containing sugar; copious flow of limpid, colorless urine; diarrhoea or torpor of intestines; unusual appetite and thirst for stimulants; languor and profound prostration; cold skin, horripilations; obesity or tendency to it.

Cuprum met

Urine acid, straw-colored, turbid after standing, a reddish, thin sediment adhered to vessel, viscous, offensive, bloody, scanty or suppressed; great and slowly progressing emaciation; suppurating tuberculosis of lungs and evident signs of depression of brain; very great thirst; increased hunger; sweetish taste of mouth; increased urination, especially at night, dry, very infrequent stool; decrease of sexual desire.

Cantharis vesicatoria

The primary effect of Cantharis is to cause strangury; its secondary effect is that of a paralytic inability to retain the urine. This physiological fact suggests the use of Cantharides in both incontinence of urine and even Diabetes: it causes frequent and profuse micturition of a pale

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color, and white flocculent sediment; hence Cantharis is suitable in cases of Diabetes complicated with Albuminuria, etc.

Carbo vegetabilis

Both Pulte and Laurie record this substance as a remedy in Diabetes. Hahnemann Gives the following pathogenetic effects: Great dryness in the mouth early when waking; excessive thirst and hunger; pain in the liver, as if bruised; frequent desire to urinate, with anxiety day and night; Diabetes; general physical depression; great lassitude and languor after a short walk, with attacks of sudden weakness and fainting. The moral symptoms are striking: there is an indescribable anguish; oppression of the chest; general uneasiness, impatience, and great irritability.

Carbolicum acidum

Carbolic acid suits those patients who are broken down, prostrated. Septic conditions especially in persons who are somnolent, who easily fall asleep. Frequent urination at night more so in old patients. Urine contains albumin and ketones. Intense halitosis with dyspepsia or constipation. Great desire for stimulants.

Causticum

Diabetic neuropathy with paralysis and numbness. Cracking in knees. Stiff muscles with sensation as if the tendons were shortened. Paralysis ameliorated by cold applications even by cold drinks. Emaciation. Cataract.

Ceanothus americanus

Diabetes in persons with splenic troubles, enlargement and pain in the left side of the abdomen which is worse lying on the left side. Green frothy urine which contains sugar. Diabetes complicated with hypertension.

Cephalandra indica

It is a great homoeopathic drug for Diabetes mellitus, associated with biliousness, abscess, boils and carbuncles, profuse urination making the patient weak with dryness of mouth and considerable thirst, often worse after urination. The whole body "burns like fire", relieved by cold bathing.

Chionanthus virginica

Diabetes with liver disorder.

Coca

Diabetes mellitus with impotence. No appetite except for sweets.

Cuprum arsenicosum

Diabetes with cramps in extremities, at night and Amel by heat. The profuse amount of urine suddenly becoming very scanty, drowsiness with tendency to coma. Varicose ulcers with tendency to become gangrenous.

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Curare

Diabetes-Glycosuria with motor paralysis. Ptosis of right side. Very distressing dyspnoea. Weakness of hands and fingers in pianists Reflexes diminished or abolished.

Fluoricum acidum

This remedy is suited to chronic cases which demonstrate a syphilitic taint either in the past or the family history. Complaints of old age or of those who are prematurely old. Alcoholics. Hot patients whose discharge tend to be thin, foul and acrid. This remedy is found more useful when the patient consults you with some full-down complication of Diabetes like ulcers (which have red edges). Redness of the palms. Diabetes with circulatory troubles of the lower extremities due to atony of the veins and the capillaries.

Hepar sulphur

The slightest contradiction makes him break out into the greatest violence, he could kill somebody without hesitation; sight gets dim when reading; heaviness and pressure in stomach after a moderate meal, unusual hunger, much thirst; desire for acids and wine; sexual desire increased, erections feeble; urine acrid, burning, making the inner surface of the prepuce or of the pudenda sore and ulcerated; emission of much pale urine, with pressure on bladder; emission of pale, clear urine, which on standing becomes turbid, thick, and deposits a white sediment.

Helleborus niger

The symptomatology of this remedy corresponds to one of the acute medical emergencies – Diabetic Pre-coma. The patient is in a low state, he sees and hears imperfectly with generalised muscular weakness. This is most commonly due to hypoglycaemia either due to inadequate oral intake or an overdose of insulin or oral hypoglycaemic agents. The patient picks at his lips and clothes. There is a constant chewing motion of the jaw. Sighing respiration with slow, small, soft pulse. The patient shrieks and shouts; he cannot be fully aroused. Another characteristic symptom is that the patient greedily swallows water even when unconscious.

Iris versicolor

Diabetes in patients with a tendency to sick headaches which are associated with visual disturbances. Greasy taste in the mouth, with burning of the whole alimentary tract. Profuse clear urine with burning in the urethra after urination. Iris has a marked action on the pancreas.

Glycerinum

Diabetes with profuse and frequent urination, increases specific gravity and sugar in urine, with emaciation and mental and physical debility. Influenzal pneumonia in diabetics. Irritating coryza.

Gymnema sylvestre

It is confidently accepted as a sovereign remedy for diabetes by experienced homeopaths. The features are: urine is loaded with sugar, after passing urine patient feels extremely weak. Profuse urination, passes several times a day and in copious quantity. There is a burning all

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over the body, boils and carbuncle appearing anywhere on body. Drinks water often in large quantity. Sexual power gone or lost. Profuse urination after sexual intercourse.

Helonias dioica

Dull gloomy and irritable; melancholy; impotence; pain and lameness in the back; numb feet. 'Patient is better when kept busy'; Urine albuminous, phosphatic, profuse and clear, contains sugar. Used in tincture or 3rd potency. Constant aching and tenderness over kidneys. Diabetes, first stages; urine profuse, clear, contains sugar. Lips dry, stick together: great thirst, restlessness; emaciation; irritable and melancholy. Diabetes with rheumatic symptoms. Albuminuria with great weakness.

Hepar sulph

The slightest contradiction makes him break out into the greatest violence, he could kill somebody without hesitation; sight gets dim when reading; heaviness and pressure in stomach after a moderate meal, unusual hunger, much thirst; desire for acids and wine; sexual desire increased, erections feeble; urine acrid, burning, making the inner surface of the prepuce or of the pudenda sore and ulcerated; emission of much pale urine, with pressure on bladder; emission of pale, clear urine, which on standing becomes turbid, thick, and deposits a white sediment.

Insulin

Long before the discovery of Insulin Dr.Pierre Jousset of Paris prepared a pancreatic juice on a glycerine basis which he administered to diabetic patients in doses of 10 or 20 drops a day in water and had results sufficiently good to consider pancreatic juice, orally administered, as a remedy of great value in diabetes. Dr. Cartier, his practical successor, praised it insisted on smaller doses given by mouth as larger doses and hypodermic injections of it had no effect in ordinary diabetes. Baker advises the homoeopathic strengths of Insulin 3d to 30th and reports happy results therefrom. Great care must be taken not to overdose. Boericke says that it maintains the blood sugar at a normal level and the urine remains free of sugar. Epileptic convulsions and mental derangements have been produced by hypodermic use of this hormone.

Iodium

It shows almost all the classical symptoms of Diabetes, unquenchable thirst, voracious appetite with steadily increasing emaciation, hepatic and gastric troubles, increased urination, tendency to eruption and boils, great debility, slightest effort induces perspiration. Diabetes due to pancreatic diseases. Urine acrid, thick, with cuticle on the surface.

Kali brom

Emaciation, paleness, skin cold and dry, pulse rapid and feeble, tongue red and tender, gums spongy and bleeding; thirst excessive; appetite voracious; bowels constipated; urine pale, frequent, of great density, and loaded with sugar; liver tumid and tender.

Kali mur

Excessive and sugary urine; itching in urethra; stomach and liver deranged; dry and light-colored stools; pain in kidneys; great weakness and somnolence.

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Kali phos

Nervous weakness; breath peculiar, or hay like odour; thirst, voracious hunger, emaciation; hepatic troubles.

Kreosotum

Perfect depression of the trophic nervous system. Heaviness all over, with drowsiness; depressing of spirits; head feels confused and dull; dim sightedness; flat, bitter taste; appetite, with sensation of fulness; intermittent, hard, dry stool; frequent and copious emission of hot, clear urine; bruised sensation in chest and all along the back; physical exhaustion, worse from rest; great itching of genitals during and after micturition.

Lacticum acidum

Diabetes due to gastro-hepatic disorders, copious urination, urine light yellow, thirst, nausea, weakness, voracious appetite and constipation, dry skin and tongue, also occasional gastralagia are the commonly presenting symptoms. Diabetes with rheumatic symptoms. Tongue dry parched, voracious hunger Nausea better from eating. Rheumatic pains in joints, shoulders, wrist and knees with much weakness.

Lachesis

Despondency and peevishness; dimness of eyes; livid-grey complexion; readily bleeding gums; sweetish taste; constipation; violent urging to urinate, with copious discharge; impotence; difficult suffocative breathing; laming pain and weakness in back and extremities; gangrene; emaciation with muscular relaxation.

Lacticum acidum

An exceedingly good remedy in the gastro-hepatic variety of diabetes and good results often follow its use. It has a fine clinical record. The symptoms are: urinates copiously and freely, urine light yellow and saccharine, thirst, nausea, debility, voracious appetite and costive bowels. Dry skin, dry tongue, gastralgia.

Lac vaccinum defloratum

Excessive aching of back; enormous quantities of urine voided daily, with excessive lassitude and prostration; intense throbbing headache, especially in forehead, with nausea, vomiting and most obstinate constipation.

Lecithinum

Urine contains phosphates, sugar and albumin. Brain fag, neurasthenia and insomnia, forgetful. Tired weak, short breath and loss of flesh. Male power enfeebled.

Lithium carb

Very frequent urination, disturbing sleep; turbid urine, with much mucous deposit; dark reddish-brown deposit in urine.

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Lycopodium

Peevish and depressed in mind; thirst and hunger constant, but worse at night; flatulence; faeces small in quantity; want of natural warmth; sexual desire and power gone; lithic acid gravel; pulmonary phthisis, pituitosa and purulenta, with hectic; great emaciation; mental, nervous and bodily exhaustion; gouty lithaemia. Diabetes due to gastric disorder and hepatic diseases. Polyuria during night, Pruritus vulvae, numbness in limbs; hands and feet go numb with tearing pain in limbs especially while at rest (intermittent claudications). Skin prone to ulceration.

Lycopus virginicus

Diabetes mellitus and insipidus from some derangement of the central nervous system or sympatheticus; morbus Basedowii; copious flow of clear urine of great density, containing sugar; intense thirst; great emaciation, etc. increased bronchial irritation, with sighing respiration; cardiac depression.

Magnesia sulph

Gloominess, especially mornings, and disinclination for work; mouth and throat very dry, as if numb, with a sweetish-bitter taste, in the morning, disappearing after breakfast; aversion to all food; slight thirst which can be resisted; urine copious, light-yellow, soon becomes turbid and deposits copious red sediment; erections without desire for an embrace; exhaustion and prostration, amelioration by rest momentarily.

Medorrhinum

Clarke mentions Diabetes in the clinical symptomatology of this remedy. A family history of gonorrhoea, aggravation of all symptoms from sunrise to sunset, amelioration at the sea-shore, obstinate rheumatism (and sequelae of rheumatism), albuminuria, glandular enlargements, difficulty in mental concentration, impatience are the guiding symptoms to the use of this remedy in Diabetes. The patient cannot speak without crying, which ameliorates. Patient craves salt, sweets, ice, green fruits. Great thirst especially for alcoholic beverages. Itching of the body worse when thinking of it. Neuropathy, burning of the palms and the feet, which though cold to touch, are better when uncovered and fanned.

Morphinum

A most useful remedy for diabetic neuropathy. Intensely painful neuralgias better by hot applications. Multiple neuritis. Diabetic Pre-coma and Coma with very dry mouth and great thirst. Difficult swallowing from paralysis of the pharynx; better hot drinks, worse solids. Incessant, deathly nausea with vomiting. Diarrhoea or constipation with horrible tenesmus. Alternate tachycardia and bradycardia. Diaphragmatic paralysis. Melancholic delirium. Neuralgic pains cause twitching and jerking of limbs.

Moschus

Unquenchable thirst; great emaciation; costiveness; impotence; frequent passage of large quantities of saccharine urine; paralytic condition of the brain; dimness of sight; earthy complexion; great dryness of the mouth and putrid taste; great thirst for stimulants and aversion to food; prickling in the skin; general exhaustion, with coldness all over.

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Natrum sulph

Depressed, irritable, taciturn, tired of life; dulness in head and weakness of sight; dryness and burning in the eyes; nosebleed; dryness of mouth and throat; great thirst for very cold drinks; voracious appetite, with a boring pain; disgust while eating; foetid flatus; increased urination, especially at night; pains in small of back, with burning urine; aemoptoe; cough, with purulent expectoration.

Nitricum acidum

Nitricum Acidum diminishes the secretion of urine, and moderates the thirst and heat in Diabetes.

Nux vomica

Good livers and sedentary habits. Acidity, with dyspeptic troubles; constriction of the throat; dry cough; pains in the back; numbness; paretic condition of the lower extremities; after ineffectual desire to urinate, frequent and more copious urination than could be expected from the quantity of liquid taken; sexual desire strong; spinal lesions exciting cause.

Opium

After mental shocks or injuries. Dulness, sadness, weak memory; vision obscured as by a fog; face bloated, congested or sunken and pale; tongue thickly coated, dry; mouth and oesophagus dry; frothy sputa; ravenous hunger and unquenchable thirst; constipation more than diarrhoea; great pain and difficulty in expelling urine; no passage of urine or faeces; urine turbid, brown, with an iridescent film, scanty; weariness and numbness all over.

Pancreatinum

Diabetes with lientric diarrhea: thin diabetics. Panereatic diabetes.

Phosphoric acid

Neurogenic glycosuria. Debility from loss of animal fluids; bad effects fromgrief, anguish, sorrow and care; all the joints feel bruised; very sensitive to fresh air; lassitude and heaviness; weakness of mind; falling out of the hair; dimness of eyes; excessive thirst; eructations from acids; pressure in stomach; hard, difficult stool; shortness of breathing; urine thick, like milk (chyluria) or lime-water, with whitish curds, with stringy, bloody lumps, or clear, limpid, and containing much sugar; pain in back and kidneys; dull pressure in bladder; great weakness and emaciation; furunculosis.

Phosphorus

Useful in diabetes and pancreatic diseases, especially in those of a tuberculous or gouty diathesis. The pancreatic involvement will call attention to Phosphorus Glycosuria, with phthisis; urine profuse, pale, watery; or turbid, whitish, like curdled milk, with brickdust sediment and variegated cuticle on surface; gouty diathesis; cerebral disease; cheesy degeneration of lungs. It should be remembered in Diabetes Mellitus, when it has been preceded or is accompanied by disease of the pancreas.

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Picric acid

Cortex of brain congested; urine contains sugar and albumen, dark red, of high specific gravity; great indifference, lack of will power to do anything; eyes feel dry, as if full of sand, sight dim and confused; saliva white, frothy and stringy; disgust for food; very great thirst for cold water; great sexual desire with emissions; excessive languor and prostration, it seemed difficult to move the limbs; feet cold, chilly, cannot get warm, followed by clammy sweat; chilly all over, except head and spine; throbbing, jerking of muscles with great pains between hips. The urine has an abnormally high specific gravity and contains sugar; it is also albuminous.

Plumbum

Lowness of spirits, anguish and melancholy; diminution of sight; dryness of mouth; dry, cracked tongue; feeling of contraction and constriction in throat; fever with unquenchable thirst; dingy color of skin; gangrene; constipation; hectic fever with dry, hacking cough from suppuration of lungs; great exhaustion; impotence; excessive emaciation; great hunger; obstinate belching and vomiting. Chronic lead-poisoning produces a perfect picture of glycosuria and of morbus Brightii, and Hering considered it one of the most important drugs in this form of disease.

Podophyllum

Chalky stools; profuse and frequent micturition immediately after drinking; excessive hepatic action; hot, sour flatus.

Ratanhia

Considerable emaciation and weakness; limbs sore and aching; great appetite; insatiable thirst and constant dryness of the mouth; gums livid and swollen; soreness in the kidneys; severe pains in small of back, improved by motion; hard stool, with straining; frequent urging to urinate, with scanty discharge, or passes large quantities of light-colored urine.

Secale cornutum

Great general lassitude; heaviness of limbs; loss of strength; emaciation; gangrene; skin dry and withered; furuncles; petechiae; fever, with unquenchable thirst; diminished power of the senses; dryness of the mouth; morbidly great appetite; cardialgia; costiveness; diarrhoea; watery urine; increased quantity of urine.

Senna

Urine contains sugar, acetone, oxalates and phosphates. Prostration, fainting, constipation with colic and flatulence. Liver enlarged and tender.

Syzygium jambolanum

It is capable of reducing the amount of sugar in the urine, especially when used in tincture form or very low trituration, great thirst, weakness, emaciation. Patient passes large quantity of urine of high specific gravity, old ulcers of skin: diabetic ulceration. (Homoeopathic Treatment of Diabetes Mellitus-Kansal Kamal)

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Tarentula hispanica

Copious urine with sugar. Diabetes with grief, anxiety, restlessness and weakness, with emaciation. Patients impulsive, violent, irritable, hysterical, feign sickness. Patients with increased sexual passion, intractable constipation. Patients, who feel sore all over the body, feel better from music, rubbing. Consolation causes weeping.

Terebinthiniae oleum

Inability to concentrate the mind; dull, languid mind, relieved by frequent micturition; despondency; wearied of life; obscuration of sight; sunken features; lips cracked and slightly bleeding; epistaxis; spongy gums; tongue dry and red; foul breath; hunger and thirst, with debility; aversion to meat; rancid or acrid eructation's; burning in stomach and hypochondria; tympanites'; albuminuria, with frequent micturition; sugar is noticed in urine after large doses of Tereb.

Thuja occidentalis

Glycosuria after a long-suppressed gonorrhoea, frequent desire to urinate day and night; craving alternates with want of appetite; longs for cold food and drink; urine contains sugar, foams, deposits a brown mucus; debility aggr. mornings.

Uranium nitricum

This remedy is praised highly by Hughes and others in diabetes originating in dyspepsia. It has polyuria, polydypsia, dryness of the mouth and skin. It causes sugar in the urine. Dr. Laning said that no remedy gives such universally good results; it lessens the sugar and quantity of the urine; he recommended the 3x trituration. It is when the disease is due to assimilative derangements that Uranium is the remedy, and symptoms such as defective digestion, languor, debility and much sugar in the urine, enormous appetite and thirst, yet the patient continues to emaciate. The patient, inspite of good appetite and thirst, emaciates. For all the complications of diabetes, such as diabetic nephropathy, degeneration of liver, high blood pressure and dropsy: unable to retain the urine without pain. Impotence.

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