

Review Article

Insulin resistance dealt with homoeopathy

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ABSTRACT

One of the intricacies of diabetes is to understand the phenomenon of insulin resistance (IR). The phenomenon of IR applies to all types of diabetes. IR is a condition where the body's cells stop responding to the glucose control hormone. In the current article, the lead author focuses on the IR related intricacies of diabetes and the role of homoeopathy in all the 4 types of diabetes. The first three types are type 1, type 2 and type 3 the 4th type is maturity onset of diabetes in the young (MODY). The IR phenomenon cuts across among all sections of population including the working group and that's why the discussion of IR is related to the growing economy as it puts burden on the economy. The article discusses the epidemiology, patho-physiology, prevention, control and treatment of IR especially at the global and national level. Thereafter, it discusses the integration of homoeopathy in to the IR domain. The properties of homoeopathy regarding the essential medicine (EM) in the national list of EM (NLEM) and the national list of essential AYUSH medicines (NLEAM) are also dealt upon. A suggested treatment protocol based on homoeopathic therapeutics is given at the end of the article after focusing on the burden of IR at national level through data from large scale surveys. In that section, the benefits that are to be accrued as a result of homoeopathic integration is also touched upon.

Keywords: IR, Hyperglycemia, Homoeopathy, Miasms, Materia medica

INTRODUCTION

In diabetes, diabetics should understand their condition so that they can manage their condition better thereby preventing threatening conditions like cardiovascular diseases and renal failure. Our body derives energy from proteins, fats and carbohydrates. Proteins do not impact glucose levels while fats contribute minimally or 10% to glucose conversion. Carbohydrates translate to 100% glucose.¹⁻⁶

Our body has to deal with glucose as it flows in the blood and moves around that may cause more damage. The body takes care of glucose in a special way. The body transports this glucose to our cells. Cells have glucose transporters (GLUT) that activate and create the opening on the cell membrane so that the glucose can enter our cells. However, GLUTs do not naturally want to come to the cell surface and help glucose get inside. Insulin is the key that fits into special locks called insulin receptors on the cell surface. Such changes activate enzymes that act as special helpers and they start up tiny Kinesin motors. Such motors help GLUTs move to the cell surface and create an opening in which glucose enters the cells. Inside the cells, glucose is used to produce energy.¹⁻⁸

This is the physiology which gets altered when there is inadequate insulin production, impaired insulin receptors, dysfunctional enzymes or compromised motor proteins that hinders the smooth progression of glucose into cells as GLUTs do not reach the cell surface. The glucose entry reduces or stops thereby leading to hyperglycemia which in fact is diabetes.¹⁻⁹

Fats get metabolized into free fatty acids and other fat breaking products. Mitochondria of the cell membrane use the fats generating reactive oxygen species (ROS) under controlled conditions. If the individual continues to eat a fat rich diet, fat will breakdown further and fat breakdown products will increase. Sustaining the fat rich diet leads to disruption in the cell function. Fat breakdown products start to disrupt insulin signaling pathway. In contrast, ROS disturbs everything that includes the insulin pathway and ultimately leads to IR.¹⁻¹⁰

This phenomenon does not mean that if a healthy or an unhealthy person has fat rich diet for a long time, the person will become IR. In the initial stages, IR is temporary and can be reversed. By the way, if a person is obese and has type 2 diabetes, the only way is to cut down on fat rich diet while including natural foods that are rich in antioxidants or supplements. This behavior will help the body to reverse IR and reduce inflammation in general. This is how carbohydrates and fats play in peaking up the blood sugar levels if taken in combination for a long time. This situation is challenging for insulin dependent persons who need insulin during the peak glucose level.¹⁻¹¹

Carbohydrates convert into glucose while entering pancreas thus generating high energy molecules such as

adenosine tri phosphate (ATP). Pancreatic beta cells sense high energy situation and assume that glucose is abundant in bloodstream and more insulin is thus produced. Insulin secretion is not an immediate response to eating and it continues even after meals. The process can lead to false signal of glucose abundance, triggering hunger and the cycle of overeating leads to obesity and dyslipidemia.¹⁻¹²

DIET AND IR

The consumption of excess carbohydrates especially in India and broadly in South Asia through rice consumption is well known and supported by data also. Chinese people have reduced their rice consumption. In North and West India, the major contributor to IR is consumption of refined wheat flour.¹⁻¹³

Excess carbohydrates can lead to obesity and particularly central obesity or fat in the abdominal area. This fat not only disrupts the functions of insulin but a person with central obesity has fat deposited on their liver and muscles. Minus this fat the insulin can work smoothly and easily burn off the glucose. In fact, this fat slows down the activity of the insulin.¹⁻¹⁴

Rice and wheat when consumed in moderation does not lead to IR. In reality, people do not consume in moderation. Rice and roti (Flat bread made from wheat flour) become the main part of our breakfast, lunch and dinner. All other food intakes are accompaniment. In fact, in an ideal plate vegetables should make up half of the plate, proteins a quarter and carbohydrates should be just a quarter.¹⁻¹⁵

The ideal plate should replace the highly polished rice and refined wheat with complex carbohydrates such as whole grains, millets and oats. Among fruits, consumption of most of them should be in moderation. Bananas, mangoes and other highly sweet fruits should be eaten sparingly as these can cause IR. Therefore, to manage IR, fruit juices are to be avoided as these juices have no fibre.¹⁻¹⁵

Saturated fats like high fat dairy, ghee, vanaspati oil, coconut oil, palm oil leads to IR. Any oil that remains solid at room temperature including trans- fats that are greasy and forms solid layers that are seen on many desserts leads to IR. Mono unsaturated fats (MUFA) is the best and poly unsaturated fats (PUFA) is also quite good to deal with IR. Sunflower and sunflower oils are PUFA oils. Red meat consumption leads to IR and diabetics should consume lean meat like poultry or fish. Fish has Ω -3 fatty acids that help reduce IR.¹⁻¹⁵

Similarly, vegetarians can consume Bengal gram, green gram, rajma and mushrooms since these are low in carbohydrates, high in fibre and protein. Soya bean has a 40% protein content. The vegetables that should be eaten less are potatoes, yams, beetroot, tapioca. These are basically root vegetables. Among root vegetables, carrot is the exception. Vegetables like carrots contain nutrients

such as carotenoids and vitamin A. Vegetables like tomato and cucumber are preferred to be eaten raw.¹⁻¹⁵

As per WHO, consumption of sugars should be less than 5% of the calories per 24 hours. That is only one or two tea spoons of sugar a day. Coming to nuts, the nuts like groundnut, pistachio, cashew and almond are all good for managing IR. Unsalted nuts reduce IR and decrease weight. The nuts contain a lot of calories and are very satiating. Per day, a fistful of nuts is optimal. Cashews increase the high-density lipoprotein (HDL) and reduce blood pressure.¹⁻¹⁶

Dairy products actually protect against IR, obesity and diabetes. Yogurt is best for IR, milk is good for IR, cheese is okay for IR, butter is neutral for IR. Dairy products not

only protect but also provide protein and calcium. It is seen that one glass of milk gives 500 mg of calcium that is half the daily requirement even for a pregnant woman and enough for a man. Further, yogurt improves the gut microbiota. Besides diet, the focus to reduce IR is the through a triad of the flexibility, aerobics and the resistance.¹⁻¹⁶

BURDEN OF IR IN INDIA

As IR is a phenomenon in diabetes, to assess the burden of IR, the article picks up the prevalence data from national family health survey 5 data. From this data, the article deduces the burden using the projected population of India as in 2024 in the absence of a census since 2021. The following table gives the details related to data.¹⁷

Table 1: Prevalence of blood sugar among adults in India.¹⁷

Indicator	Gender	Urban	Rural	Total
Percentage of women age 15 years and above who have high blood sugar level (141-160 mg/dl)	Female	6.7	5.9	6.1
Percentage of women age 15 years and above who have very high blood sugar level (>160 mg/dl)	Female	8.0	5.5	6.3
Percentage of women age 15 years and above who have high or very high blood sugar level (>140 mg/dl) or taking medicine to control blood sugar level	Female	16.3	12.3	13.5
Percentage of men age 15 years and above who have high blood sugar level (141-160 mg/dl)	Male	7.8	7.0	7.3
Percentage of men age 15 years and above who have very high blood sugar level (>160 mg/dl)	Male	8.5	6.5	7.2
Percentage of men age 15 years and above who have high or very high blood sugar level (>140 mg/dl) or taking medicine to control blood sugar level	Male	17.9	14.5	15.6

This reflects the magnitude of the problem in the country from the perspective of non-communicable diseases (NCD) as IR is a metabolic disorder with an altered diet and poor life style. The data shows that males are more diabetic or have the IR phenomenon more than females in India.¹⁸

Currently, the crude death rate includes NCD deaths and this trend is catching up as NCDs have the upper hand than the communicable diseases (CD) as a result of epidemiological transition. Diabetes is one such NCD with an improper life style with IR.¹⁸

In India, homoeopathy is the third preferred system of treatment after allopathy and ayurveda. About 10% of the populations depend on homoeopathy for their health issues.

Homoeopathy is used by 10% of the population in India. So, out of the 1500 million populations, 150 million use homoeopathy or 150 million uses homoeopathy for their health issues. These 150 million consist of all age groups i.e. infant to old age.^{19,20}

A section among the 15+ age group suffers from diabetes as per NFHS 5. Considering that, it is 2/3rd of the population in India (15-65+ year age group) or 100 crore or 1000 million. Out of these 100 crores, 27% adults are diabetic or about 27 crores are diabetic. These people are at risk from the rest 73 crore. As 150 million use homoeopathy, 2/3rd of the users will be in 15-65+ year age group or 100 million. So, if homoeopathy is integrated in to the diabetic battle in India, 100 million people can be saved from being complicated diabetic cases and IR. Application of lifestyle concepts along with therapeutics of homoeopathy will be boon in this regard.¹⁷⁻²⁰

HOMOEOPATHIC APPROACH

As mentioned above, the phenomenon of IR is actually a destructive one. From the homoeopathic angle, the ‘syphilitic’ miasm is in the background as this miasm causes destruction in the body. In homoeopathy ‘miasms’ are disease causing dynamic influences that are infectious in nature.²¹⁻³⁰

There are three types of diabetes, one is diabetes mellitus and the other is diabetes insipidus and the third one is Type

3 that attacks the brain. Here, all types are discussed as IR is a common phenomenon to all the types.¹⁻³

The drugs that are mentioned here act in high sugar levels thereby preventing IR. This IR leads to diabetes and related complications. These drugs are bovista, helonias, phosphorus, phosphoric acid, tarentula, terebinth and uranium nitricum.²¹⁻³⁰

Besides the potency medicines, the mother tinctures of Indian drugs can also be prescribed. IR is the leading cause of diabetes here and because of IR, the body gets weakened and complications occur. Hence, the medicines that cover both diabetes and IR are to be prescribed.²¹⁻³⁰

Pancreatic cells and the hepatobiliary system is affected in IR. To prevent IR, drugs like 'pancreatinum', 'iris Ver', 'iodium', 'abies nigra', 'calcareo ars' are to be prescribed.²¹⁻³⁰

Besides, the specific drugs like Arsenic Bromide, Alloxan, Phaseolus, phlorizin can also be prescribed to deal with IR thereby preventing diabetes in the long run.²¹⁻³⁰

For prevention of uncontrolled sugar levels and IR, miasmatic prescribing should be done based on the predominant miasms.²¹⁻³⁰

Similarly, the appropriate bowel nosodes that are related to the drugs mentioned above need to be prescribed along with the above-mentioned drugs.^{27,32}

On the same lines, the indicated Bach Flower remedy also needs to be prescribed depending on the mental status of the patient.³⁰

As a supplement, bio combination number 7 (seven) can also be prescribed along with other drugs.²¹⁻³⁰

WAY AHEAD

Lifestyle changes, dietary adjustments along with proper medications are crucial. Reducing fat rich diets and embracing natural, antioxidant rich foods reverses IR. When we understand these intricate processes, people can make informed choices while designing personalized dietary plans. People have to devise holistic strategies which optimize well-being of the individuals.¹⁻³

As the national list of essential medicine and the national list of essential AYUSH medicine deciphers the cost effective, therapeutically active and no side effects properties of homoeopathy, the same can be applied to cover masses to deal with the IR phenomenon.^{31,34}

CONCLUSION

A burden, quality of life compromiser, a factor of early morbidity and mortality, an epidemiological event, you name it and it applies to IR and diabetes. If we focus to

reduce the phenomenon of IR, the incidence and prevalence of diabetes will eventually come down. It is like reducing neonatal mortality to impact on child mortality. People should not depend on pharmacological interventions only and rather their focus should be to adopt natural diet and healthy life styles.

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