

Technology in Diabetes & Homoeopathy

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Abstract

Review Article

The use of technology to deal with diabetes started in the hospitals & institutions but currently it has percolated to the household level. Diabetics are asked to monitor glucose levels frequently every 24 hours. The irony is that it has not reduced the number of diabetics & instead the numbers are increasing on a regular basis in the country. Primarily, the article deals with the Type 2 diabetes. The article also deals with the most appropriate technology that is sustainable, cost effective and clinically effective while having no side effects. However, the article proposes a review of blood sugar once every month with the sustainable methods like dietary changes, lifestyle changes, doing yoga & meditation while integrating homoeopathy that has the triad properties of an essential medicine. Constant dwelling on the sugar levels leads to an occupied mind that is full of stress. Such situations complicate the problem without helping to deal with the problem. In order to deal with the dual problem of mental & physical issues, the article suggests a treatment protocol based on homoeopathic therapeutics.

Keywords: Diabetes, NLEM, NLEAM, Homoeopathy, Materia Medica, Miasm.

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INTRODUCTION

Many diabetics see that their Fasting Blood Sugar (FBS) level is within range but their Post Prandial Blood Sugar (PPBS) is also within range after breakfast. They wonder when they see that their three month average blood sugar through HbA1c is not within range.

The range is above 7% as usually it hovers around 8 to 9% [1-8].

The Continuous Glucose Monitor (CGM), a technology helps us to find the answer. When the CGM is attached to the diabetic's body, it is found that the sugar level rises late in the evening & becomes normal

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early morning. The answer cannot be given by the conventional approaches like FBS & PPBS as these approaches miss tracking several hours of high blood glucose. As the remedial measure, the evening snacks of diabetics & early morning breakfast should be adopted by diabetics [1-8].

Blood sugar varies many times per 24 hours. This variation cannot be tracked by the crude approaches like FBS, PPBS & HbA1c [1-8].

The other device like the glucometer obtains blood glucose value through finger prick testing. Although these devices help us to monitor & manage diabetes, the finger prick method is undesirable. To add to that, there is a limit to which one can prick fingers daily. Thus, the role of the CGM came to focus [1-8].

LITERATURE REVIEW

Let us understand the principle involved in these devices. Most of the technological methods involve measuring the glucose level in the interstitial fluids or the fluids between our cells & not the blood. It follows the blood level by about 15 to 20 minutes. A very fine canula with a sensor is inserted beneath the skin of the diabetics so that it is in contact with the fluid. This sensor measures the glucose level in the fluid every few minutes & transmits the reading to a small external device or phone. It is to be noted that most devices require calibration once or twice every 24 hours. The finger stick blood glucose value measured on the glucose meters can only be reliable if calibration is done. Further, it is important to note that the sensor should be replaced twice a month as the usefulness of the sensor finishes in a fortnight [1-8].

The other popular device is 'Flash Libre'. Here, the sensor is to be attached in the upper arm. The device has a hand held reader that displays glucose value when held near the sensor. The device also shows the trend of glucose values. This data can help prevent low glucose reactions.

A device from the company 'Medtronic' displays blood glucose value on the smart phone regularly & is equipped with alarms for low & high sugar values. The device is very helpful in paediatric diabetic cases as the glucose level of the child in school can be tracked. The device can also be integrated with an insulin pump thus helping in automatic adjustment of insulin doses [1-8].

The 'Dexcom' company has a new version that does not require calibration & can be integrated with insulin pumps. The Eversense E3 CGM gives real time blood sugar reading every 5 minutes. What it requires is a small skin incision to implant the sensor. The transmitter is worn externally & is thus visible. It also

requires charging for 10 minutes per 24 hours. The data does not connect with other diabetic devices like insulin pumps [1-8].

Challenges

The most challenging aspect of these technological gadgets is the high cost of these devices. Many people cannot afford these devices. Further, these devices are not available through the public health system & the insurance sector both in public & private. This situation means the devices are further more expensive for most of the Indians. To add to that, inaccuracies at the lower & higher end of glucose values usually occur in these devices. Hence, the recommendation is to cross check these glucose values with a glucometer before taking therapeutic decisions [1-8].

Epidemiology

The Lancet study on diabetes in India pegs the prevalence of diabetes at 11.4%. However, since the article focuses on devices that involve high costs, it is prudent to see the socio economic status of people in India. In 2022-24, 8.5% of the population were poor & out of this 8.5%, 5.3% are newly poor. Thus it reflects a decline in chronic poverty & growth in transient poverty [9-12]. Hence, about 10% (rounding up 8.5%) are out of the domain of using devices straightway.

Out of the 90%, only 34% of the population can afford these devices. Out of these 34%, 3% are rich as per Statista in 2021 & 31% are in the middle class as per a report by the People Research on India's Consumer Economy (PRICE) in 2024. Hence, a total of 66% of population cannot afford these devices. So in nutshell, only 1/3rd of the population in India can afford the devices.

As diabetes cuts across all sections, the 12% (rounding up 11.4%) has all these groups. Hypothetically, using the above analogy only 1/3rd of these 12% or 4% can afford the devices [9-12].

Burden of the Disease in India

The projected population of India is 150 crores. As 12% of them are diabetic, $12 \times 150 / 100 = 8$ crores are diabetics. Out of that, only 1/3rd can afford these devices. Hence, $8 \times 1/3 = 2.66$ crores are diabetics who can afford these devices [13].

Burden of the diabetic issue in India

The article also picks up the prevalence data of diabetes 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 [14].

Table 1: Prevalence of Blood Sugar among adults in India (Source- NFHS 5, 2019-21) [14]

Indicator	Gender	Urban	Rural	Total
Percentage of Women age 15 years and above who have high blood sugar level (141-160mg/dl)	Female	6.7	5.9	6.1
Percentage of Women age 15 years and above who have very high blood sugar level (>160mg/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(>140mg/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 (141-160mg/dl)	Male	7.8	7.0	7.3
Percentage of Men age 15 years and above who have very high blood sugar level (>160mg/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(>140mg/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 diabetes is a metabolic disorder with an altered diet & poor life style. The data shows that males are more diabetic than females in India [13, 14].

Currently, the Crude Death Rate includes Non Communicable Diseases (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 diabetes [13, 14].

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 use Homoeopathy for their health issues. These 150 million consist of all age groups i.e. infant to old age [15, 16].

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 millions. Out of this 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. Application of lifestyle concepts along with the therapeutics of homoeopathy will be a boon in this regard. These diabetics need not be in the constant mode of tracking the diabetic condition or glucose levels [14-16].

Homoeopathic Angle

As mentioned above, the phenomenon of diabetes 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 [17-28].

There are three types of diabetes, one is diabetes mellitus & the other is diabetes insipidus & the third one is Type 3 that attacks the brain. Here, all types are discussed as complication is a common phenomenon to all the types [17-28].

The drugs that are mentioned here act in high sugar levels thereby preventing diabetes. This diabetic condition leads to potent diabetes & related complications. These drugs are Bovista, Helonias, Phosphorus, Phosphoric Acid, Tarentula, Terebinth & Uranium Nitricum [17-28].

Besides the potency medicines, the mother tinctures of Indian drugs can also be prescribed. IR is the leading cause of diabetes here & because of diabetes, the body gets weakened & complications occur. Hence, the medicines that cover both diabetes & complications are to be prescribed [17-28].

Pancreatic cells & the Hepato Biliary system is affected in diabetes. To prevent diabetes, drugs like 'Pancreatinum', 'Iris Ver', 'Iodium', 'Abies Nigra', 'Calcarea Ars' are to be prescribed [17-28].

Besides, the specific drugs like Arsenic Bromide, Alloxan, Phaseolus, Phlorizin can also be prescribed to deal with diabetes thereby preventing diabetes in the long run [17-28].

For prevention of uncontrolled sugar levels, miasmatic prescribing should be done based on the predominant miasms [17-28].

Similarly, the appropriate Bowel Nosodes that are related to the drugs mentioned above need to be prescribed along with the above-mentioned drugs [17-28].

On the same lines, the indicated Bach Flower remedy also needs to be prescribed depending on the mental status of the patient [17-28].

As a supplement, Bio Combination Number 7 (seven) can also be prescribed along with other drugs [17-28].

Next Steps

Lifestyle changes, dietary adjustments along with proper medications are crucial. Reducing fat rich diets & embracing natural, antioxidant rich foods reverses diabetes & complications. 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. This will free them from the clutches of devices that people are hooked into 24*7 [1-6].

Uniqueness of Homoeopathy

The first & foremost uniqueness is the individualized approach of Homoeopathy. This makes it a better choice as an effective therapeutic system coupled with dietary & lifestyle changes while having judicious use of devices [29, 30].

As the National List of Essential Medicine & the National List of Essential AYUSH medicine decipher the cost effective, therapeutically active & no side effects properties of homoeopathy, the same can be applied to cover masses to deal with the hyperglycemia phenomenon [29, 30].

CONCLUSION

Technology is important to track & deal with diabetes. While it is an important part of the entire diabetic intervention, it does not treat diabetes. As the current approaches of pharmaceutical interventions are only per 24 hours, the best way to deal with diabetes is change in life style & dietary habits. The anti-diabetic drugs have only reduced mortalities & have severely compromised diabetics with morbidity & complications. The NCDs keep rising year by year.

The company that make these devices will promote households to buy these but constantly monitoring sugar levels 24*7 does not help as the mind is under stress while constantly dwelling upon the problem. Instead, if the diabetics focus on the diet & life style, they need to monitor their status once in every 3 months. The young generation learns that everyday dwelling on the diabetes through devices & drugs is the only way out. They need to be told & show that diet, lifestyle & holistic ways are ways out in the long run.

In the long run approach that is also sustainable, homoeopathy fits into the bill most appropriately as it is

individualized, holistic, cost effective and clinically effective & without any side effects.

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Declaration

The lead author declares that the Homoeopathic protocol given here is only suggestive in nature.

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