

## The tale of two diseases – type-1 and type-2 diabetes mellitus

Sushruta (Figure 1), the ancient Hindu physician recognized two types of diabetes nearly 3000 years ago – one with youth onset and the other due to injudicious diet.

### Type-1 diabetes mellitus

For half a century of clinical practice in the area of diabetes care and academic research, I owe thanks to my mentors, M. Viswanathan and K. S. Sanjivi, who offered me the opportunity to study the condition at the closest possible level in both adults and children. At the Voluntary Health Services (VHS) Hospital, Chennai, we have built up a dedicated juvenile diabetes comprehensive lifetime free care and research unit<sup>1,2</sup> thanks to the patronage of philanthropists who have sustained our work in this field for the past 49 years, benefiting more than 900 children and appreciated by experts from various parts of the world<sup>3,4</sup>.

When I look back at the whole canvas of the developments dispassionately, in the field of type-1 diabetes mellitus (DM), the following are the salient points that have impacted their lives for better or worse – we have to learn lessons from these, for future. In 1982, work done by us in Chennai showed lucidly that pointed to the enormous differences in the incidence of JIDDM between the West and the East<sup>5</sup>. This was never accepted by the pundits then. A lot of genetic research on HLA haplotypes versus IDDM done both in the West<sup>6</sup> and by us in Chennai<sup>7</sup> drew a blank.

When I started juvenile diabetes free care in VHS, the cost of insulin (crystalline, NPH, PZI) was Rs 30/10 ml (40 u/ml) vial. Today, after 49 years, in my opinion if there is any reason for research in manufacturing human insulin

(costing fivefold), it is only to make big bucks and not for any improved care, control or prevention of complications in the patients<sup>8</sup>. Insulin is now beyond the reach of children in developing countries – so much so, an editorial in *Lancet*<sup>9</sup> dared to write that the single most important cause of death in type-1 diabetes (especially in girls) is lack of access to insulin in countries like India and Sub-Saharan Africa. Has anyone done something about this – either the governments or the corporates? Is it wrong to demand that life-saving insulin should be accessible to every child (male or female) in every nook and corner of our country and the whole world? But then, there is competition from the vaccine peddlers (which is more life-taking than saving), sucking out the meagre resources.

For more than four decades, spending multimillion dollars in the search for antibody markers like PICA, GADA followed by programmes for prevention/postponement of type-1 DM, like ENDIT, ended with disastrous results. Also, multimillion dollar clinical trials like Accord, Advance, etc. with surrogate end-points like Euglycemia and HbA1c factored into them with commercial motives, resulted in more premature mortality and morbidity, with only modest reductions in the micro-vascular complications<sup>10</sup>. It is with this background that the TAG – Voluntary Health Service Diabetic Research Centre was started in 2011, to find an out-of-the box solution.

In our quest for improving the clinical condition and quality of life of type-I DM patients and also to reduce the economic burden on them, we have embarked on a novel metaphysical energy therapy which we have been trying for the past 3 years at our Centre.

In a recently published paper<sup>11</sup>, we have presented our study in 15 young persons with type-1 DM using this novel therapy, called the dynamic acupuncture mediated metaphysical (DAMM) therapy delivered through acupuncture meridians by an experienced healer. Among the 15 cases, 6 showed significant improvement in fasting C-peptide levels. With the advent of DAMM therapy the cost of treatment will be greatly reduced, with apparently no side effects. This has brought a new hope in the world of type-1 diabetics.

### Type-2 diabetes mellitus

‘The story of Rosiglitazone is one of death, greed and corruption’ – mentioned a report<sup>12</sup> of the United States Senate



Figure 1. Sushruta, the ancient Hindu physician.

Committee on Finance, dated 20 February 2010. This speaks volumes of the nature of pharmaceutical research and the nexus that exists in today's health care dispensation in the world, which is constantly highlighting lifestyle diseases as the greatest health hazard for humankind.

When the 'Dream' trial (a 6-year multinational project, including India) led by MacMaster University, Canada, was announced by the Indian partner<sup>13</sup>, I took strong exception and questioned the ethical/moral propriety of drug intervention over a 6-year period on patients with IGT, using compounds with unknown track record<sup>14</sup>. I do not want to go into the details of my futile efforts to highlight the dangers of 'thiazolidinediones' with their intracellular cell-damaging propensity due to the PPAR- $\gamma$ , except to recall the disastrous misadventure caused by the first born, viz. troglitazone<sup>15</sup>.

'Secrecy does not serve us well' wrote Fiona Godlee<sup>16</sup>, in an editorial in 2013. She has quoted from Deborah Cohen's investigative journalism, unearthing the fact that the drug companies concerned knew very well about the dangers of GLP1 agonists and the DPP4 inhibitors and their unwanted proliferative effects on the pancreas (euphemism for cancer) even at the earliest stage of development, and their efforts to suppress scientific debate through pressure on academics and medical journals. It is revealing that she mentions about the dangers of present rules on openness of clinical trials data which prohibit independent scrutiny, thereby exposing patients to the risk of increased mortality and morbidity.

The story of biguanides – metformin and phenformin – on which I have written<sup>17-19</sup> and spoken for over three decades, is yet another example of fooling 'all the people all the time'<sup>20</sup>. It is really not amusing that the United Kingdom Prospective Diabetic Study found that 96% increase in diabetes-related deaths, and a 60% increase in all cause deaths in the sub-group (Metformin + Su)<sup>21,22</sup> was given a mysterious burial.

The final nail in the metformin saga is the article by Bous-sageon<sup>23</sup> and his colleagues, in which they ask whether metformin is bringing practical benefit to patients and question the focus on surrogate markers, viz. 'blood sugar/HbA1c'.

Type-2 DM is by and large a simple metabolic aberration in 80–90% of those who get it. The much touted exponential increase in its incidence has been highlighted for the past three decades by the international bodies like WHO, IDF and various national associates, who all know that this increased diabetes incidence is man-made, or shall we say drug-induced, viz. due to the enormous increase in usage of corticosteroids, statins and antidepressant psychotic drugs, that has contributed to the bulk of the increasing incidence of diabetes in the past three decades<sup>24,25</sup>.

At our research centre we have developed (over the past 15 years) and installed a unique and customized Electronic Medical Record System<sup>26</sup> that has proven a boon in treating patients in correct non-linear fashion and avoiding Adverse drug reactions and interactions<sup>27</sup>.

Finally, it is apt to recall the words of the Birmingham physician, John Malins<sup>28</sup>, 'Detection drives and attempts at preventive treatment may be undertaken with more enthusiasm than discretion and it is more than ever necessary that diabetic or "prediabetic" patients should be under the care of

physicians or general practitioners who will put their interests first and make a balanced assessment of their needs.'

The past is there for all to see, the present has to be endured, and the future? It is for those who are enlightened, to use their experience and insights, truthfully and with wisdom, and carry it forward for the benefit of the future generations; failing which, we shall be like the person described in Kalidasa's poem (translated from Sanskrit):

'Do not accept anything as good just because it is old,  
Do not reject anything as useless just because it is new,  
The wise weigh the substance and decide for themselves,  
It is the unwise who are led by the opinion of others.'

(Opening stanza from *Malavikagnimitra*, a Sanskrit drama by the Indian poet Kalidasa, 5th century AD).

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