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### Editorial

# Diabetes - An ancient disease, epidemic & an economic burden for the present era

Diabetes was first recognized by ancient Egyptians around 1500 B.C., who defined it as a rare condition in which a person urinates excessively and loses weight. Aretaeus, a Greek physician, somewhere between 80 to 138 C.E., described the sweet nature of urine excreted by diabetic individuals<sup>1</sup>. Much of the current knowledge about diabetes and its treatment were highlighted by a Dr Joslin, a U.S physician, considered as a pioneer in diabetes<sup>2</sup>. Currently, as per the statistics available by International Diabetes Federation, there are about 415 million people suffering from diabetes in the world and for upcoming year of 2040, the number of people affected will approximately be, 642 million<sup>3</sup>. For the year 2000, people suffering from diabetes in India were 31.7 million<sup>4</sup>, and India recorded the maximum number of diabetic patients in the world followed by China and USA<sup>5</sup>. If the current condition prevails and nothing much is done in near future, then by the year 2030, number of individuals affected by diabetes in India would raise up to 79 million<sup>4</sup>.

### The battle to curb diabetes

Several programmes initiated by the Government of India, have been trying to curb down the rising prevalence of diabetes. In 1987 National Diabetes Control Programme was launched. The Programme was initially started in the States of Jammu and Kashmir, Tamil Nadu and Karnataka, but was not carried further due to paucity of funds<sup>6</sup>. However, it gave rise to another pilot project by government of India, The National Programme for Prevention and Control of Diabetes, Cardiovascular Disease, and Stroke (NPCDCS), launched in January, 2008<sup>6</sup>. This

Programme has completed its pilot phase in 10 States and now aims to expand it in all the other States of India. The Programme intends to provide early diagnosis, appropriate management of diabetes and risk reduction associated with it6. Rapid urbanization leading to lifestyle changes, genetic predisposition to diabetes, central obesity, higher insulin resistance in Asian Indians are some of the major factors predisposing type II diabetes in Indian population<sup>7</sup>. Apart from this, other aggravating factors are poor diabetes screening, preventive services, non-adherence to diabetes management guidelines, and long distance travel to health services mainly in rural sector, disparities in diabetes management between urban and rural areas<sup>5</sup>. Furthermore, the awareness of people for diabetes in India is low as compared with the western world. The Chennai Urban Rural Epidemiology Study (CURES) has stated that approximately 25 per cent of the Indian population is unaware of diabetes<sup>6</sup>. Moreover, the knowledge for risk factors associated with diabetes was even lesser. Only 11.9 per cent of study subjects acknowledged that obesity and physical inactivity were the predisposing factors for diabetes<sup>6</sup>.

## Socio-economic status and diabetes - An economic burden

It has been evident that certain risk factors contributing to diabetes are well correlated with socioeconomic status (SES)<sup>8</sup>. SES and its fundamental elements, are distinctly known determinates of health. Among these, low income is one of the contributing factors which accounts for high prevalence of diabetes. Diabetes is two folds more widespread in low income

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population as compared with their higher income counterparts9. Saydah and Locher10 demonstrated education and income as the major socio-economic gradients related with diabetes mortality in a U.S. population based study. Further, co-morbidities associated with diabetes exerts a huge economic burden both at individual and national level. The increased cost of expenditure in diabetes is due to long term complications of kidney failure, blindness, heart disease and foot complications, which further lead to economical and other social consequences<sup>11</sup>. Additionally, health care services are extensively provided by private sector in India. These include high end corporate hospitals, charitable institutions, nursing homes, individual practitioners and even unqualified providers. Seventy per cent of diabetes patients are treated by private health providers, spending four times more when compared with the cost of treatment provided by the government facilities<sup>12</sup>. The estimated cost of diabetes treatment could range from 1230 billion ₹ (\$25.5 billion) to 1837.3 billion ₹ (\$38.0 billion)<sup>13</sup>. There is a huge variation in the quality of care provided by health sector. Lack of national guidelines and treatment protocols for health services is making monitoring and quality assessment difficult<sup>14</sup>. Thus, diabetes epidemic in India is a consequential loss to national productivity and exchequer at social level<sup>12</sup>.

### **Prevention strategies**

Much has to be done to improve the present condition from prevention side. The key issue to be addressed is to generate an awareness regarding risk factors associated with diabetes. These include lifestyle modification, balanced diet, control for obesity, lower stressful working condition, etc. From the policy point of view, increased accessibility to health services, affordability of drugs for every person, quality of service and focus on research could improve the present situation. Focus on behaviour modification in children from the school level is another important element<sup>6</sup>. Study conducted in schools revealed the effectiveness of structured behaviour intervention programmes among school kids. This study focused on improving physical activities and dietary modification to combat childhood obesity in schools<sup>15</sup>.

To conclude, a definite need to strengthen health care system is an important dimension to reduce diabetes and diabetes related complications. Ineffective management for diabetes is due to barrier between patients and provider health services. Improving self management abilities of general population is one of the essential measures for diabetes control<sup>14</sup>. Overall, there is an immediate need to improve health care delivery system and to generate awareness among people. Early detection, cost-effective management and rehabilitation of diabetic patient, focusing more towards lower SES could improve the present scenario<sup>12</sup>.

### Vijay Viswanathan\* & Samriddhi Ranjan

Dr M. Viswanathan Diabetes Research Centre & MV Hospital for Diabetes, Royapuram, Chennai 600 013, Tamil Nadu, India *\*For correspondence*: drvijay@mvdiabetes.com

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