

# Insulin Initiation: An Uttar Pradesh Perspective

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Diabetes prevalence has been rising more rapidly in middle- and low-income countries. More than 10% of urban Indians have diabetes, at least half of the Indians who have it do not know it, and the prevalence of the disease is increasingly shifting to poorer people. Across the 15 states, 7.3% of people had diabetes and one-half of them had not previously been diagnosed with the condition. The prevalence of diabetes was higher in urban areas (11.2%) than in rural areas (5.2%). It was higher in mainland states than in the northeast.<sup>1</sup>

Muzaffarnagar is a city and a municipal board in the Indian state of Uttar Pradesh and is a part of National Capital Region. It is the headquarters of the Muzaffarnagar district. The last population estimate in 2011 was around 495,500. This was 0.04% of the total India population.<sup>2</sup>

High-carbohydrate diet is quintessential for people of Uttar Pradesh. Dishes such as *puri-aloo* and *kachori* are a necessary part of festivities, which in turn are a frequent occurrence in the state. Mutton biryanis of the state are world famous. Western part of the state forms the core of sugarcane production in the country. About two-thirds of the total sugarcane produced in India is consumed for making *gur* and *khandsari*, and hence the same are consumed a lot by the people of the state.

Diabetes management in Uttar Pradesh is plagued with various superstitions and myths, which hinder the patients from seeking medical advice and practicing healthy lifestyle. Fasting for the whole lunar month of *Ramadan* is considered as an obligatory duty of every healthy Muslim, but fasting in a diabetic person increases the risk for hypoglycemia, hyperglycemia, diabetic ketoacidosis, dehydration, and thrombosis.<sup>3</sup>

Consuming high amount of carbohydrates, saturated fats, and trans-fats causes increased diabetes risk in all populations, whereas risk is significantly reduced by consuming low glycemic index foods and foods high in dietary fiber. Generally, North Indian meals have higher percentage of carbohydrate, which are highly caloric. Sedentary lifestyle increases the risk of diabetes in all ethnic groups; however, South Asians appear to be even less physically active than their Caucasian counterparts. Agriculture and trade policies encourage over-consumption of unhealthy foods, whereas urban design and transport facilities promote sedentary lifestyle.

All these factors make it necessary to initiate the use of insulin early in diabetic patients of this region. However, initiating insulin has its own problems. There are several

barriers for initiating insulin such as fear of self-injection, fear of needles, negative misconceptions about initiating insulin, inconvenience, and patient perception as personal failure.<sup>4,5</sup> These barriers need to be overcome because early insulin therapy improves  $\beta$ -cell function while leading to a significant improvement in glycemia.

Various continuing medical education programs and workshops can be arranged to improve awareness about insulin, at the physician level. The workshops can invite physicians for open discussions about the queries they have. Various tough and complex issues of diabetes such as initiating insulin early can be addressed with examples of day-to-day life such as “while killing a snake you have to hit hard and hit early.”<sup>6</sup> Insulin regimens and preparations should be chosen in concordance with dietary practices and preferences. The best practices followed by any physician needs to be shared and informed to their other colleagues so that they can also give benefit of those practices to their patients. Social marketing tactics<sup>7</sup> should be used to encourage timely glycemic control in the public at large.

## Conflict of Interest

None.

## References

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