

Insulin pump: A popular device for management of type 1 diabetes mellitus

Sir,

Insulin pump therapy (also known as continuous subcutaneous insulin infusion) forms an integral part of the management of type 1 diabetes in some countries and gaining a lot of popularity in India. Insulin pumps are safe, easy to use but costly option for insulin delivery and should be considered in managing patients with type 1 diabetes.

After reading the review article titled “forum for injection techniques, India: The first Indian recommendations for best practice in insulin injection technique” by Kalra *et al.*^[1] I noticed that a very important insulin administration technique was not discussed. Insulin pump therapy (also known as continuous subcutaneous insulin infusion) forms an integral part of the management of type 1 diabetes in some countries and gaining a lot of popularity in India.

Most insulin regimes use two or more injections a day which contain a long acting insulin combined with a smaller amount of faster-acting insulin. An alternative is insulin pumps which work by delivering a basal dose of fast-acting

insulin subcutaneously continually throughout 24 hours a day, at a rate that is pre-set according to the needs of the patient. An additional dose can be administered by the patient depending upon carbohydrate counting, by pressing a particular button on the pump. This gives the patient a lot of freedom for meal times and activity.

According to national institute of health and clinical excellence in UK,^[2] continuous subcutaneous insulin infusion or ‘insulin pump’ therapy is recommended as a possible treatment for adults and children 12 years and over with type 1 diabetes mellitus if:

- Attempts to reach target haemoglobin A1c (HbA1c) levels with multiple daily injections result in the person having ‘disabling hypoglycaemia, or
- HbA1c levels have remained high (8.5% or above) with multiple daily injections (including using long-acting insulin analogues if appropriate) despite the person and/or their carer carefully trying to manage their diabetes.

Insulin pump therapy is recommended as a possible treatment for children under 12 years with type 1 diabetes mellitus if treatment with multiple daily injections is not practical or is not considered appropriate.

A variety of insulin pumps are available in the market.^[3] They are small in size and can be attached to the body in different ways e.g. around waist or belt. They have warning and reminder alarms and are safe to use. They are relatively painless as compared to insulin pens and have shown high acceptance by young population partly because it being a “fancy gadget which they can show off”. Cost can be an issue and will need to be addressed when considering this as an option.

Use of an insulin pump involves a lot of motivation initially by the person using it, as one needs to get used to the mechanism and theory behind it.^[3] The management should be done under the guidance of experts who will arrange appropriate follow-up and monitor the progress. A lot of information can be obtained by analysing the in-built memory in these pumps. This helps in clinical decision making e.g., issues with compliance, doses and complications.

In summary, insulin pumps are safe, easy to use but costly option for insulin delivery and should be considered in managing patients with type 1 diabetes.

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