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Short Communication

Premixed Insulins: Educating Patients about Administration and Expiration

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Premixed insulin products cover both basal and prandial blood glucose, as they have basal and prandial components in a single injection. Patients who are on a basal-bolus insulin regimen require atleast four injections daily. Premixed insulins offer an advantage of a two injection regimen. Available premixed insulin products include NPH/Regular 70/30, Aspart mix 70/30, Lispro mix 75/25, Lispro mix 50/50 [1]. Based on HbA1C goals and other patient factors, the treatment regimen can be switched between basal-bolus to premixed insulins and vice versa [1-3]. In addition to patient preference, one of the common factors I have encountered for product switching and product selection is insurance coverage, where usually only one premixed insulin product is covered.

When insulin products are switched it is important to not assume that the patient is familiar with insulin administration even if the patient was on a basal-bolus regimen. Similarly, the patient may not pay close attention to the administration and expiration date instructions for the newly initiated insulin. There are some notable differences in the expiry dates for pre-mixed vials and pens at room temperature or if they are opened when compared to basal and bolus insulin products. In addition to examining insulin preparations for physical changes, such as clumping, frosting, precipitation, or discoloration for a possible loss of potency, it is critical to note the expiry date after opening to minimize incidence of hypoglycemia or hyperglycemia in patients.

Any pre-mixed insulin unopened vials and prefilled pens with lispro and aspart may be stored under refrigeration between 2°C and 8°C (36°F to 46°F) until the expiration date. Once in use, any premixed insulin vial may be stored under refrigeration or at room temperature <30°C (<86°F) and used within 28 days [4-6].

Premixed insulin preparations in vials with regular insulin:

- Humulin® 70/30 vials stored at room temperature below 30°C (86°F) and/or in use, the vial must be discarded after 31 days [7].
- Novolin® 70/30 vials stored at room temperature ≤25°C (≤77°F) or in use can be used up to 42 days [8].

Premixed insulin pens in use should be stored at room temperature <30°C (<86°F) and used within [4-8]:

- 10 days for any pre-mixed pen with lispro
- 14 days for any pre-mixed pen with aspart
- 10 days for Humulin®70/30 pens

All prefilled pens should be rolled between the palms ten times and inverted 180° ten times to resuspend the insulin. The time of administration is similar to that of the bolus insulin component. Patients must be reminded to prime the insulin pen with 2 units before each injection to avoid injecting air and ensure that the right dose of insulin is administered. With the availability of multiple injectable products to manage diabetes, it is imperative to note the differences in expiry dates and administration instructions for any insulin product and educate patients appropriately.

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