Neonatal diabetes (NDM) is a rare condition presenting with hyperglycemia within the first 6 months of life. It can be transient (TND) or permanent (PND) and are usually associated with genetic defects [1]. NDM occurs in approximately 1/100,000-1,60,000 live births and over 20 mutations have been identified [2]. TND constitute about 50-60% of all NDM and tends to resolve by 12 weeks, but may recur later, during periods of increased insulin resistance, namely puberty and pregnancy [3].

In this study, we attempted to evaluate the risk and benefits of starting glibenclamide with insulin in neonatal diabetes before the results of genetic testing.

### Study Design

**Subjects:**
- The hospital records of patients aged <6 months at diagnosis of NDM were reviewed retrospectively.
- The children were admitted in the Pediatric Endocrinology department of Indraprastha Apollo hospital. Neonatal diabetes was diagnosed in children less than 6 months of age at presentation, polyuria, dehydration, failure to gain weight, random blood sugar >200mg/dl.

**Methods:**
- All the infants were admitted and started on subcutaneous insulin detemir, starting at a dose of 0.3U/kg/day and 2-3 doses of insulin lispro were given, titrated according to the blood sugars.
- Genetic mutation analysis was done after obtaining informed consent from the parents.
- All the infants have Sanger sequencing done for the KCN11, ABC8, and INS genes and expanded sequencing was done in one case with FOXP3 mutation.
- Empirical glibenclamide was given only in infants with the following criteria: requiring high doses of insulin >0.7U/kg/day and persisting hyperglycemia.
- with no associated diarrhea, syndromic features, dermatitis non consanguineous parents
- A trial of oral glibenclamide starting at 0.2mg/kg/day along with the subcutaneous insulin.
- Four infants fulfilling these criteria were given a trial of glibenclamide.

### Results

**4 infants (case 1, 2, 7, 11)** were given a trial of empirical glibenclamide after sending the samples for genetic testing. All these infants were receiving insulin at a dose of >0.8U/kg/d, and were not euglycemic on this dose, none of the parents of these cases had consanguineous marriage, and had no syndromic features.

- Three of the cases (2,7,11) responded favorably and insulin was tapered off slowly.
- However, in case no 1, there was an initial reduction in insulin dose and we were able to stop insulin, but within a month the child became hyperglycemic and was restarted on insulin.
- However, in case no 1, there was an initial reduction in insulin dose and we were able to stop insulin, but within a month the child became hyperglycemic and was restarted on insulin.
- Even in the single case no 1, in which glibenclamide was not successful, there were no side effects to it.

### References: