Metformin is better than glibenclamide in moderate gestational diabetes mellitus

Source: Anne George, Jiji E. Mathews, Sam D. Beck M, Benjamin SJ, Abraham A, Antonisamy B, Jana AK, Nihal Thomas; Comparison of neonatal outcomes in women with gestational diabetes with moderate hyperglycemia on metformin or glibenclamide – A randomized controlled trial.

**Clinical Question:** Which is better – metformin or glibenclamide, for treating moderate gestational diabetes mellitus?

**Authors’ Conclusions**
1. Neonatal complications (especially neonatal hypoglycemia) were significantly less in those treated with metformin.
2. The use of oral hypoglycemic drugs was associated with good pregnancy outcomes comparable to optimal treatment with insulin.
3. Metformin is the preferred oral hypoglycemic agent in gestational diabetes with moderate hyperglycemia.

**Background and Methods**
Several studies have shown that oral hypoglycemic agents, metformin and glibenclamide are as effective as insulin in the management of gestational diabetes. None however have compared glibenclamide with metformin. Glibenclamide has been shown to cross the placental barrier with umbilical cord plasma levels averaging 70% of maternal concentrations. This has implications in neonatal hypoglycemia. The aim of the study was to compare neonatal and maternal outcomes in women with moderate gestational diabetes not controlled with medical nutritional therapy (MNT) treated with either glibenclamide or metformin.

The authors randomized 159 women to either a glibenclamide or metformin group. These were women who had moderate levels of hyperglycemia (i.e., when any of two values of fasting glucose > 5.3 mmol/L, 1 hr - ≥ 10 mmol/l, 2 hr – ≥ 8.6 mmol/L and 3 hr ≥ 7.8 mmol/L) which was not controlled with MNT (medical nutritional therapy). The neonatal outcomes assessed were macrosomia, neonatal hypoglycemia, need for phototherapy, respiratory distress, still birth, and birth trauma. The study was conducted in Christian Medical College, Vellore.

**Summary of results:**
The study showed that the incidence of hypoglycemia was significantly lower in babies of women treated with metformin [95% CI-12.5; P=0.001] when compared to glibenclamide. None of the babies in the metformin group developed hypoglycemia. Glycemic control in mothers and the other neonatal outcomes were comparable in both groups.

The authors concluded that the composite of neonatal complications was significantly less common in neonates of women treated with metformin. Neonatal hypoglycemia was the main complication that contributed to this difference. Neonates of women on metformin were also likely to need less surveillance, admission to special care nursery and to have shorter hospital stays. They concluded that metformin is the preferred oral hypoglycemic agent in gestational diabetes with moderate hyperglycemia.