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Review

Glyburide for the treatment of gestational diabetes mellitus

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Abstract:
Insulin is the traditional treatment for gestational diabetes mellitus (GDM) unresponsive to dietary interventions. Until recently, oral hypoglycemic drugs had been contraindicated due to concerns regarding teratogenicity and the possibility of neonatal hypoglycemia.

In contrast to other sulfonylurea drugs, *in vitro* and *in vivo* investigations have demonstrated very low transplacental transport of glyburide to the fetal circulation. The mechanisms preventing glyburide from crossing the human placenta are not completely understood. A combination of extremely high protein binding and a relatively short elimination half-life might partially explain it. It has also been demonstrated that glyburide is effluxed from the fetal to the maternal circulation by the breast cancer resistance protein (BRCP) and the human multidrug resistance protein 3 (MRP3).

Since 2000, several studies have reported an 80–85% success rate of glyburide treatment. However, some authors have noticed a glyburide-related increased risk of preeclampsia, macrosomia, neonatal hypoglycemia, admission to a neonatal intensive care unit and need for phototherapy. These possible maternal as well as neonatal adverse outcomes warrant further investigations. Until that time, the use of glyburide should remain inadvisable in pregnancy.

Key words:
glyburide, gestational diabetes mellitus, pregnancy, transplacental transport