

DIABETES

Gestational diabetes: glibenclamide or metformin?

More than twice the number of women who receive metformin for the treatment of gestational diabetes mellitus eventually require insulin therapy compared with those who receive glibenclamide, according to a study published in *Obstetrics and Gynecology*.

The diagnosis and management of gestational diabetes mellitus improves some maternal and neonatal outcomes. Insulin therapy is the standard treatment for women with gestational diabetes mellitus who do not achieve glycemic control with diet and exercise interventions alone, but the necessity to frequently inject can result in low compliance with insulin. The use of oral agents for the treatment of gestational diabetes mellitus could provide an alternative, and these agents are increasingly being used in women with the condition; nevertheless, questions about safety still remain and reports of the efficacy of particular oral agents are inconsistent.

In this randomized controlled trial to compare the efficacy of metformin and glibenclamide, glycemic control was defined as a fasting blood glucose of ≤ 5.8 mmol/l and a 2-h postprandial blood

glucose of ≤ 6.7 mmol/l. The team from New Mexico, USA, studied 149 women (>80% of whom were Hispanic) with gestational diabetes mellitus who did not achieve glycemic control with diet and exercise. The women were randomly allocated to receive glibenclamide ($n=74$; initial dose 2.5 mg twice daily) or metformin ($n=75$; initial dose 500 mg per day). The women's glycemic control was reviewed weekly and, if necessary, glibenclamide was increased to a maximum dose of 10 mg twice daily and metformin to 2 g per day. Oral antidiabetic medication was discontinued and insulin therapy started if patients taking the maximum dose of their respective oral medication did not achieve adequate glycemic control for 2 consecutive weeks.

Insulin therapy was required by more than double the number of women in the metformin group than in the glibenclamide group (34.7% versus 16%). Most maternal and neonatal outcomes were similar between the groups, but the rate of nonelective cesarean sections was higher and mean birth weight was lower in the metformin group than the glibenclamide group. For patients who achieved glycemic control, no differences



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in mean fasting blood glucose levels or 2-h postprandial blood glucose levels were found between the groups.

The researchers speculate that an ethnic difference in response to metformin might explain why they found a high failure rate in the current study, which involved mainly Hispanic women, whereas in a preliminary study they had found very low failure rates for metformin among African American or Native American women.

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Original article Moore, L. E. *et al.* Metformin compared with glyburide in gestational diabetes: a randomized controlled trial. *Obstet. Gynecol.* 115, 55–59 (2010)