

Glyburide Is a Safe and Effective Treatment for Gestational Diabetes

To the Editor:

In 2004, a survey of 1400 American obstetricians indicated that 13% of them began gestational diabetes mellitus (GDM) first-line treatment with glyburide when diet and exercise failed.¹ This departure from beginning therapy with insulin followed just three years after Langer's landmark randomized controlled trial demonstrating the safety and efficacy of this second generation sulphonylurea in the treatment of gestational diabetes.²

Langer's study of 404 GDM patients was preceded by a placental perfusion study which showed no transplacental transportation of glyburide.³

Since 2000, numerous studies of level I and level II evidence (see Table) have produced similar findings: 80% of GDM patients treated with glyburide achieve glycemic control with no risk to mother or child.^{2,4-16} There are no data on Canadian usage of glyburide in pregnancy.

This is a huge step forward for those of us providing primary obstetric care. While obstetricians in tertiary care centres have easy access to support from endocrinologists, those of us in primary care do not. The option of treating GDM with oral medication is a wonderful development, especially for those of us in rural areas and areas with Aboriginal populations, where access to care is always a challenge and specialty medicine is a distant referral away.

The traditional twice daily insulin dosing was difficult enough to initiate in primary care patients requiring glycemic control in pregnancy. The recent use of four times daily (qid) dosing, which ideally would require pre- and post-meal glucometer testing, leads to 10 needle pokes per day: four for insulin administration and six for testing. We need to simplify the treatment of GDM, particularly since the only study promoting qid dosing showed no improvement in rates of Caesarean section, macrosomia, shoulder dystocia, preterm delivery, or severe neonatal hypoglycemia.¹⁷ Those of us in primary care often deal with patients who may speak little English and may have limited education. Primary care physicians identify insulin compliance as "abysmal"¹⁸ and glyburide as far more cost effective.¹⁹ Three of the prospective studies included a treatment

Studies using glyburide for the treatment of gestational diabetes

Author (year)	n	Type of study	Level of evidence	Goal of treatment (plasma glucose in mmol/L)	Glycemic control with glyburide
Lim ⁸ (1999)	235	RC	II-3		84%
Langer ² (2000)	404	RCT	I	fasting \leq 5.0 1 hr pp \leq 6.7	82%
Gilson ⁵ (2002)	22	PC	II-2	–	82%
Fines ⁴ (2003)	84	RCC	II-2	–	"equal to insulin"
Chmait ⁶ (2004)	69	CT	II-1	fasting \leq 5.0 1 hr pp \leq 7.2	82%
Yogev ⁹ (2004)	82	CT	II-1	fasting \leq 5.3 pp \leq 6.7	"equal to insulin"
Kremer ¹⁰ (2004)	197	CT	II-2	fasting \leq 5.0 1hr pp \leq 7.5	81%
Conway ¹¹ (2004)	75	CT	II-2	fasting \leq 5.3 2hr pp \leq 6.4	84%
Bertini ¹² (2005)	77	RCT	I	fasting \leq 5.3 1 hr pp \leq 5.6	79.2%
Jacobson ¹³ (2005)	584	Retrospective study	II-3	fast \leq 5.5 1hr pp \leq 8.6 2hr pp \leq 7.2	88%
Kahn ⁷ (2006)	95	CT	II-2	fasting \leq 5.3 1hr pp \leq 7.8	81%
Rochon ¹⁴ (2006)	235	RC	II-1	fasting 3.4-5.0 2hr pp \leq 6.7	79%
Anjalakshi ¹⁵ (2007)	23	PC	II-3	2hr pp \leq 6.7	"equal to insulin"
Ramos ¹⁶ (2007)	122	RC	II-3	fasting \leq 5.6 1hr pp \leq 8.7 2hr pp \leq 7.3	84%

(Medline and EMBASE 2006-Dec 2007)

RC: retrospective cohort study; RCT: randomized controlled trial;
PC: prospective cohort study; pp: post prandial

choice, and they describe 100% patient preference for the oral treatment regimen.⁵⁻⁷

There have been no contrary findings since Langer's original study, and others consistently reproduce his results. We need to acknowledge that the use of this oral treatment regimen fills an important role in the primary care of women with gestational diabetes.

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