

Gestational diabetes mellitus: from consensus to action on screening and treatment

Results of a recent Australian trial suggest it is time to stop equivocating about screening and treatment

The 1998 consensus guidelines on the management of gestational diabetes mellitus from the Australasian Diabetes in Pregnancy Society emphasised that, “due to a lack of good quality randomised controlled clinical trials in the area of [gestational diabetes mellitus], these guidelines are based on what is a reasonable consensus of informed opinion in Australasia”.¹ The clear benefits of treating women with gestational diabetes according to these guidelines have now been demonstrated by the Australian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS).²

This study randomised 1000 women with gestational diabetes to either routine antenatal care or to an intervention that comprised home glucose monitoring, review by a diabetes educator, dietitian and physician, and insulin therapy if glycaemic targets were not met. Serious adverse perinatal outcomes occurred in 1% of the intervention group versus 4% of the routine-care group (adjusted relative risk, 0.33 [95% CI, 0.14–0.75]). The percentage of infants who were large for gestational age was lower in the intervention group (13% v 22%), with no increase in those who were small for gestational age. Although induction of labour was more common in the intervention group (39% v 29%), rates of caesarean delivery were similar (around 31%). Measures of maternal quality of life were more favourable in the intervention group. To prevent one serious perinatal outcome, 34 women needed to be treated.

The 1998 guidelines were equivocal in regard to screening for gestational diabetes, allowing either for universal screening or for selective screening based on clinical risk factors in relatively low-risk populations. In the light of the findings of ACHOIS, we believe that universal screening should now be accepted and implemented. There are multiple arguments in favour of this approach:

- Most women with gestational diabetes have no symptoms, and many have none of the classic risk factors associated with gestational diabetes.³
- Screening based on risk factors adds an extra complexity to busy routine clinical practice and may lead to some women failing to undergo appropriate testing.
- Furthermore, ACHOIS patients were relatively “low risk”, being predominantly of European background, with a mean age of around 30 years, and a mean body mass index of around 26 kg/m². Many would not have been tested based on risk factors. Nonetheless, the benefits of treatment were impressive.

The precise level of hyperglycaemia that carries increased pregnancy risk remains to be defined. ACHOIS used as its inclusion criterion a 2-hour venous plasma glucose level on oral glucose tolerance testing ≥ 7.8 mmol/L but < 11.0 mmol/L. The women included in the study had a median fasting glucose level of 4.8 mmol/L and a median 2-hour glucose level of 8.6 mmol/L. The current Australian criteria suggest fasting and 2-hour cut-offs of ≥ 5.5 mmol/L and/or ≥ 8.0 mmol/L, respectively, for the diagnosis of gestational diabetes.⁴ To avoid the confusion which could occur if multiple sets of criteria were promulgated, we suggest that the diagnostic thresholds for gestational diabetes should not be revised until the blinded prospective international epidemiological study

Evidence and recommendations on gestational diabetes

- Treatment for gestational diabetes substantially reduces adverse perinatal outcomes and improves maternal quality of life.
- Optimal proven treatment for gestational diabetes includes review by a diabetes educator, dietitian and physician, with insulin used if glycaemic targets are not achieved.
- Screening for gestational diabetes should be offered to all pregnant women.
- Maternity service providers should ensure that adequate resources are devoted to the detection and treatment of gestational diabetes. ◆

HAP0 (Hyperglycemia and Adverse Pregnancy Outcome) reports its results, which are expected by mid-2007.⁵

Screening for gestational diabetes also offers benefits from a public health viewpoint, at a time of increasing prevalence of obesity and type 2 diabetes.⁶ Screening allows identification of women with undiagnosed type 2 diabetes and those at increased risk of developing this condition in the future. Detection of gestational diabetes has the potential to benefit not only the women involved, but also their children, through intervention.⁷ Preventing progression from gestational diabetes to type 2 diabetes is already considered cost-effective.⁸

Introduction of routine screening for gestational diabetes clearly carries cost and resource implications. The number of women diagnosed with gestational diabetes will increase, and appropriate provision must be made for their care. In ACHOIS, the intervention group received care from a multidisciplinary team, which generally comprised a dietitian, diabetes educator and physician, in addition to the obstetrician and midwives. This level of care is congruent with the 1998 Australasian guidelines, but may be difficult to implement on a large scale across Australia. Other models of care may be required, with increasing involvement of midwives, general practitioners and other health care providers. There is some evidence to support the efficacy of such treatment protocols.⁹ However, the ACHOIS data² suggest that something more than “routine antenatal care” is required for optimal outcomes in this patient group. Therefore, less intensive models of care should be rigorously evaluated rather than promoted ad hoc on the basis of potential cost savings. The extra costs involved in providing optimal care for women with gestational diabetes are likely to be far outweighed by savings due to reduction in adverse perinatal outcomes.

H David McIntyre

Director of Endocrinology and Obstetric Medicine
Mater Health Services, Brisbane, QLD
david.mcintyre@mater.org.au

N Wah Cheung

Endocrinologist, Westmead Hospital, Sydney, NSW

Jeremy J N Oats

Clinical Director of Women's Services
The Royal Women's Hospital, Melbourne, VIC

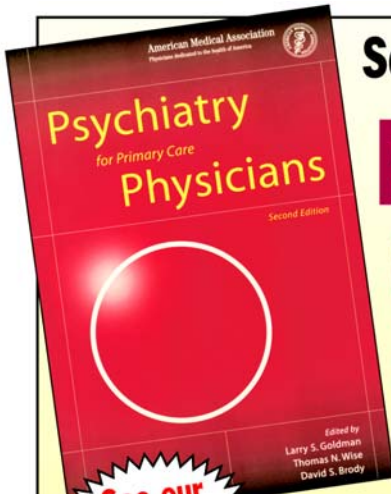
David Simmons

Professor of Medicine, Waikato Clinical School
University of Auckland, Hamilton, New Zealand

EDITORIALS

- 1 Hoffman L, Nolan C, Wilson JD, et al. Gestational diabetes mellitus — management guidelines. The Australasian Diabetes in Pregnancy Society. *Med J Aust* 1998; 169: 93-97.
- 2 Crowther CA, Hiller JE, Moss JR, et al. Effect of treatment of gestational diabetes on pregnancy outcomes. *N Engl J Med* 2005; 352: 2477-2486.
- 3 Moses RG, Moses J, Davis WS. Gestational diabetes: do lean young Caucasian women need to be tested? *Diabetes Care* 1998; 21: 1803-1806.
- 4 Martin FI. The diagnosis of gestational diabetes. *Med J Aust* 1991; 155: 112.
- 5 HAPO Study Cooperative Research Group. The Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Study. *Int J Gynaecol Obstet* 2002; 78: 69-77.

- 6 Simmons D. Gestational diabetes mellitus: growing consensus on management, but not diagnosis. *N Z Med J* 1999; 112: 45-46.
- 7 Dabelea D, Knowler WC, Pettitt DJ. Effect of diabetes in pregnancy on offspring: follow-up research in the Pima Indians. *J Matern Fetal Med* 2000; 9: 83-88.
- 8 Gregory KD, Kjos SL, Peters RK. Cost of non-insulin-dependent diabetes in women with a history of gestational diabetes: implications for prevention. *Obstet Gynecol* 1993; 81: 782-786.
- 9 Weideman WC, Marcuz L. Gestational diabetes: a triage model of care for rural perinatal providers. *Am J Obstet Gynecol* 1996; 174: 1719-1723. □



See our SPECIAL OFFER

September MJA BookClub Book of the Month

Psychiatry for Primary Care Physicians 2nd Ed



This text builds on the strengths that made the first edition a Brandon/Hill selection and one of Doody's "250 Best Books of the Year".

Psychiatry for Primary Care Physicians 2nd edition

provides a practical guide for general practitioners in today's health care system. Filled with tables and case studies, this easy-to-use resource addresses the most common adult and childhood mental health problems in primary care.

ONLY \$121.00*
Includes GST Plus P&H.

Key features include: Information helps physicians incorporate basic psychiatric care into the primary care setting. Chapters are logically organised by condition, and succinct text covers assessment, diagnosis, and treatment of psychiatric conditions. Special sections explain various diagnostic models and screening tools. Many chapters are cowritten by a psychiatrist and a practising primary care physician, so you get a specialist's knowledge tailored to your real-life practice climate. This updated edition offers new chapters on psychological frameworks, development, emergencies in psychiatry, childhood disorders, women's health disorders, geropsychiatry, and resources in psychiatric care.

Contact AMPCo: Ph 02 9562 6666 • sales@ampco.com.au • www.mja.com.au/public/bookroom/

*All prices include GST; plus \$7.65 postage and handling • Students and AMA Members receive a 10% discount (\$110.00)

To ORDER, or for further information, contact the Book Sales Coordinator:
 AMPCo, Australasian Medical Publishing Co Pty Ltd ABN 20 000 005 854
 Locked Bag 3030 Strawberry Hills NSW 2012. Ph 02 9562 6666 • Fax 02 9562 6662

To: Dr/Mr/Ms: _____
 Address: _____

 Postcode: _____

Ph: (Bus) _____ Fax: _____


Cheque/MO enclosed OR Charge my Credit Card AMA Member/Student
 Bankcard MasterCard Diners Amex Visa

Account No. _____
 Expiry Date: _____ Name: _____
 Signature: _____

This month, the MJA BookClub has a Special Offer!
Purchase this book OR any 2 of our Feature Books* and receive a FREE Magnetic Globe Jigsaw Key Ring*

This is in addition to our usual 10% discount offered to Students and AMA Members.
 *See our ad on the Inside Back Cover of this Journal.

Phone, Fax or Email us your Order NOW and WIN!
 To find out more, please contact Julie Chappell, your MJA BookClub Manager, on Ph: 02 9562 6666, or email jchappell@ampco.com.au



*This offer is for MJA BookClub "Book of the Month" and "Feature Books" only and ends 3 October 2005

*All prices subject to change without notice. Errors and omissions excepted.