

DOES A VALIDATED GDM INSULIN PREDICTION MODEL WORK WITH DIFFERENT TREATMENT TARGETS?

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Background: A validated model was developed by Bankstown-Lidcombe Hospital (B-LH) for prediction of therapy type and adverse outcomes in women with Gestational Diabetes Mellitus (GDM) (1). The Model, using seven clinical items, identifies low and high risk women at GDM diagnosis for triage into different models of care.

Aim: To validate the model in a clinical population with a different ethnic mix, therapeutic targets and model of care.

Methods: De-identified, prospectively collected data were analysed from a major Sydney Teaching Hospital (Royal Prince Alfred Hospital (RPAH)) for women diagnosed from 1992-2010 by 1991 GDM Ad Hoc Working Party, thence 1998 ADIPS criteria (2,3). Treatment targets were 5.3mmol/L fasting, 6.7mmol/L for 2-hour post-prandial (to 1999) and thereafter 7.5mmol/L for 1-hour post-prandial glucose. Seven dichotomous variables were assessed against therapy type: Medical Nutrition Therapy (MNT) only or MNT plus insulin (MNT+I). A receiver operator curve (ROC) of sensitivity plotted against 1-specificity was constructed based on the number of predictors present (0-7) versus therapy outcome.

Results: Data were available for 1381 women, mean±SD age 33.1±5.1 years, GDM diagnosis at 26.4±5.7 weeks, pre-pregnancy BMI 23.9±5.1kg/m², mean OGTT fasting BGL 4.6±0.7 mmol/L and HbA1c at GDM diagnosis 5.3±0.5%. Main ethnicities were South-East Asian 44.1%, European 32.5%, and South Asian 11.8%. Apart from gestation at diagnosis and HbA1c, all were significantly different to B-LH (p<0.05). The Table shows the number of predictors present and the corresponding percentage of women requiring MNT only versus MNT+I. The area under the ROC was 0.634 (95%CI 0.582–0.686).

Number of predictors present	MNT only n= (%)	MNT+I n= (%)
0	59 (64.8)	32 (35.2)
1	198 (61.3)	125 (38.7)
2	242 (50.5)	237 (49.5)
3	113 (38.0)	184 (62.0)
4	43 (31.2)	95 (68.8)
5	8 (19.0)	34 (81.0)
6	0 (0)	10 (100.0)
7	0 (0)	1 (100.0)
Total	663 (48.0)	718 (52.0)

Conclusion: As previously found (1), the greater the number of predictors, the greater the likelihood of MNT+I. Conversely, the less predictors present, the greater likelihood of MNT only. These findings provide further validation of the model.

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References:

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