OBSERVATIONS

Acanthosis Nigricans Among Women With Gestational Diabetes Mellitus and Risk of Adverse Pregnancy Outcomes

Acanthosis nigricans (AN) is a cutaneous manifestation of insulin resistance (1). Among women with gestational diabetes mellitus (GDM), it is not known whether AN is associated with greater need for insulin therapy in pregnancy or adverse perinatal outcomes.

We performed a prospective cohort study of consecutive women with GDM or impaired glucose tolerance and a singleton pregnancy referred to the Diabetes in Pregnancy Clinic at St. Michael's Hospital in inner city Toronto. Patients received dietary counseling and began blood glucose testing four times a day. At the initial clinic visit, each woman was examined for AN of the neck. All outcomes were adjusted for maternal age, prepregnancy body weight, parity, and maternal birthplace outside of North America.

There were 44 women with and 46 without AN. The mean ± SD prepregnancy weights were 63.6 ± 16.1 and 68.9 ± 17.9 kg, respectively, and 66 and 59% of women, respectively, were born outside of North America (χ^2 test, $P = 0.52$). Of the women born outside of North America, ~42% were East Asian, 31% were South Asian, 18% were African or Middle Eastern, 8% were Hispanic, and 1% were white European.

Before delivery, women with AN received 8.2 (95% CI −3.4 to 19.7) more units per day of insulin than women without AN, and more required treatment with insulin (57 vs. 30%; odds ratio 2.6 [95% CI 0.91–7.4]). Women with AN delivered 1.1 weeks (95% CI 0.39–1.7) earlier than unaffected women and more often by primary Cesarean section (39 vs. 20%; odds ratio 3.6 [95% CI 1.1–11.9]). There was no significant difference between women with and without AN in terms of gestational age-adjusted birth weight (−53.0 g [−254.9 to 148.9]), but infants born to women with AN spent ~0.70 days (95% CI 0.27–1.1) longer in the hospital than those born to women without AN.

Our study was small in size and was performed in a single center. We did not define AN in a standardized manner, and it may have been wrongly distinguished from normal skin pigmentation, including that altered by pregnancy (2). Women with AN were more likely to be delivered by planned Cesarean section, perhaps reflecting the tendency to perform operative deliveries in women taking insulin (3).

AN may be a marker of pronounced insulin resistance (1), including in obese women with GDM. In our study, women with AN weighed more and were nearly twice as likely to require insulin therapy and at a higher daily dose. AN can be readily assessed in most clinical settings (1); however, it must be determined if AN predicts the onset of GDM or insulin requirements in pregnancy. Future research may consider measuring the homeostasis model assessment of insulin resistance among GDM-affected women with and without AN.

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