Polycystic ovary syndrome and pregnancy

Sir,

I have read with great interest the recently published review on pregnancy complications in women with polycystic ovary syndrome (PCOS) (Palomba et al., 2015). This study concludes that women with PCOS have increased risk of developing hypertensive disorders in pregnancy [pregnancy-induced hypertension (PIH) and pre-eclampsia (PE)] and gestational diabetes (GDM) and this risk was significant even after confounding factors were taken into account (Palomba et al., 2015).

PCOS is considered an independent risk factor for the development of GDM and for this reason the Royal College of Obstetricians and Gynaecologists (RCOG) suggests that women with PCOS should undergo a fasting blood glucose test soon after their booking visit and a subsequent oral glucose tolerance test (OGTT) (Green-top Guideline No 33, 2014). The established predisposition of PCOS for developing diabetes, coupled with the inherent physiological insulin insensitivity that occurs in pregnancy, has raised the sensible hypothesis that metformin could be used prophylactically to prevent development of GDM in women with PCOS. Although a systematic review concluded there was a reduction of GDM in women with PCOS treated with metformin prophylactically (Zhu et al., 2014), the only randomized-controlled trial (RCT) conducted, revealed insignificant difference in the incidence of GDM between the metformin and the placebo groups (Vanky et al., 2010). The review by Palomba et al. (2015) is an excellent platform for reflection for the practising obstetricians and gynaecologists. Indeed, some colleagues have been prescribing metformin empirically in pregnant women with PCOS owing to its well-known good safety profile. On the other hand, we should practise evidence-based medicine; therefore more large scale RCTs are needed to clarify the effect of prophylactic use of metformin in pregnant women with PCOS.

In many NHS Trusts in the UK, women with identifiable risk factors for PE, including family or previous history of PE, high BMI, essential hypertension and renal disease, are offered umbilical artery Doppler scans around 28 weeks to assess for any potential defects in the uteroplacental circulation as suggested by the National Institute of Clinical Excellence (NICE Clinical guideline 107, 2011). Palomba et al. (2015) conclude that the risk of PIH/PE in women with PCOS increases by 50% compared with the normal population. This is an important finding which should be beneficial in pregnant women with PCOS. Unfortunately, no such study has been reported in the literature yet. The above, is even more pertinent for the hyperandrogenic phenotype of PCOS which, according to the authors, has a more adverse pregnancy profile (Palomba et al., 2015).

Along these lines, the effect of prophylactic aspirin administration in women with PCOS is worth investigating. To date, only one study investigated the effect of aspirin and metformin administration in women with PCOS (Jamal et al., 2012). It has noted significant improvement/reduction in the mean uterine artery pulsatility index in the intervention group but there was no significant difference in terms of pregnancy complications between the intervention and control groups (P = 0.12) (Jamal et al., 2012). However, the low P-value is promising and the fact that only a total of 102 women were enrolled in this study warrants further large-scale studies before definitive conclusions can be drawn. Such studies are further indicated as a recent systematic review found that PCOS manifests elevated kininogen-1 and fibrinogen which are involved in clotting pathways, and reduced annexin A2 which has fibrinolytic properties, thus demonstrating that the coagulation pathways are promoted in PCOS and could further explain the association with PE (Khan et al., 2015).

Palomba et al. (2015) is a very succinct and balanced review and I envisage great benefit in stimulating further research to shed more light in the topic as emphasized in this letter. Indeed, studies have been conducted to identify common biomarkers expressed in both PCOS and PIH/PET or GDM in order to screen pregnant women with PCOS for these associated conditions and ultimately develop preventative strategies (Galazis et al., 2012; Khan et al., 2015). It is still an early stage, but the results have been encouraging.

References


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