

Is increased body mass index associated with postpartum haemorrhage?



Government
of South Australia

SA Health

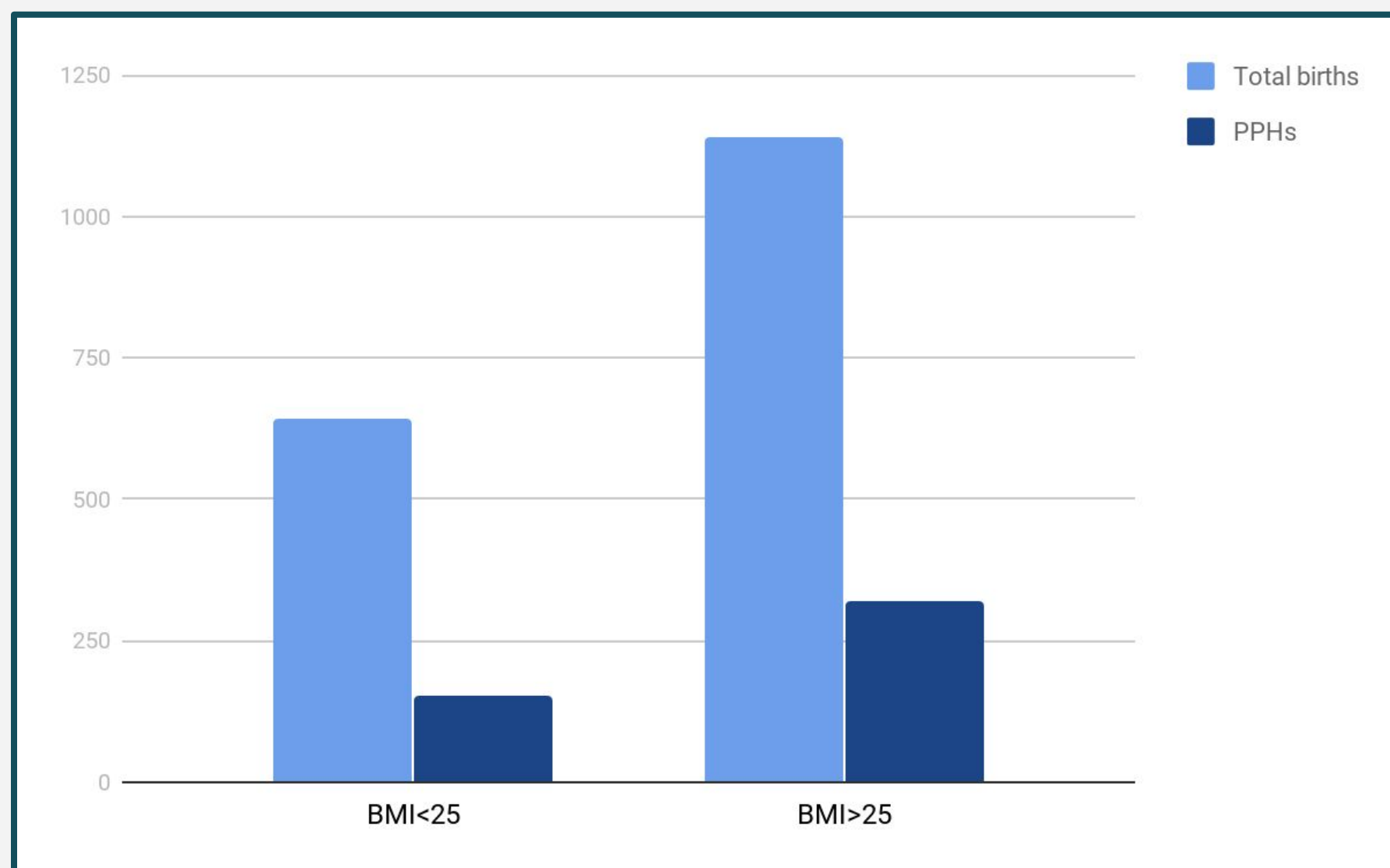
Dr Elizabeth Lindner, SA Health
elizabeth.lindner@sa.gov.au

Aim - The aim was to determine if a body mass index (BMI) of 25kg/m² or greater was associated with postpartum haemorrhage (PPH), defined as blood loss of 500 milliliters or greater in the puerperium.

Methods - Perinatal statistics for women giving birth at a major tertiary hospital and bariatric centre in South Australia for a 6-month period of November 2018-April 2019 were reviewed and retrospectively analysed. The difference in rates of PPH for women with a BMI < 25kg/m² and women with BMI of 25kg/m² or greater was compared using a two-tailed test, with alpha value 0.05.

Results - The total number of women giving birth during the period was 1810. 13 women were excluded as BMI was not recorded. Of the included women 1142 had a BMI of 25kg/m² or greater, with a total number of PPHs of 319 amongst them, at a rate of 27.93%. 642 women had a BMI less than 25kg/m² and of these 154 had a PPH, at a rate of 23.99%. The increased rate of PPHs amongst overweight and obese women of 16.45% is statistically significant (p-value 0.033).

Discussion - Increased BMI is an identified risk factor for PPH. This may be partly explained by increased BMI being a risk factor for developing conditions which are risk factors for PPH, and possibly partly due to independent factors. A bariatric centre is an ideal site to review data surrounding PPH amongst overweight and obese women. There is scope at this hospital to further research the association between BMI and PPH, review policies and start to identify further prophylactic measures in the antenatal, intrapartum, and postpartum periods to minimise PPH in these patients.



A BMI of 25kg/m² or more at the first antenatal appointment increases the risk of PPH

Body mass index: Australia vs local

- In Australia in 2017, 45.6% of all women giving birth had a BMI of 25kg/m² or greater, and 20% had a BMI of 30kg/m² or greater (AIHW, 2017)
- At the hospital studied, for the 6-month period November 2018 to April 2019 the proportion of women who gave birth with a BMI of 25kg/m² or greater (overweight and obese) at their first antenatal visit was 63.1%, and the proportion with BMI of 30kg/m² or greater (obese) was 33.5%

What do we know about BMI and PPH?

- Increased pre-pregnancy BMI and high weight gain in pregnancy are associated with increased rates of hypertensive disorders including pre-eclampsia, shoulder dystocia, and macrosomia (Sebire et al, 2001; Shin & Song, 2014), known risk factors for PPH (SOGAP, 1998)
- There is a previously recognised association between increased BMI and PPH (Sebire et al, 2001)
- Increased BMI is associated with induction of labour and operative delivery, both risk factors for PPH
- It has been suggested that impaired uterine contractility contributes to PPH (Zhang et al, 2007)
- Another theory is that PPH could be due to increased placental size in women with large BMIs (Sebire et al, 2001)

References

1. Australian Institute of Health and Welfare 2019. Australia's mothers and babies 2017—in brief. Perinatal statistics series no. 35. Cat. no. PER 100. Canberra: AIHW.
2. Scottish Obstetric Guidelines and Audit Project (SOGAP). The Management of Postpartum Haemorrhage – A clinical practice guideline for professionals involved in maternity care in Scotland. Pilot edition. SPICERH publication number 6; 1998.
3. Sebire N, Jolly M, Harris J, Wadsworth J, Joffe M, Beard R et al 2001. Maternal obesity and pregnancy outcome: a study of 287,213 pregnancies in London. International Journal of Obesity and Related Metabolic Disorders 25:1175–82.
4. Shin D & Song W 2014. Prepregnancy body mass index is an independent risk factor for gestational hypertension, gestational diabetes, preterm labor, and small- and large-for-gestational-age infants. The Journal of Maternal-Fetal & Neonatal Medicine 28:1679–86.
5. Zhang J, Bricker L, Wray S & Quenby S 2007. Poor uterine contractility in obese women. International Journal of Obstetrics and Gynecology 114:343–8.