

Maternal BMI and obstetric outcomes at The Northern Hospital 2011-2016



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BACKGROUND

- Obesity is a major public health concern for Australia and carries special risks during pregnancy
- Many complications associated with maternal obesity behave in a dose-dependent manner¹, placing severely obese women and their infants at greatest risk of adverse outcomes
- Internationally, a BMI >50kg/m² has a reported prevalence of 0.06-2.2%^{2,3} but data on Australian women is limited

AIM

- To examine obstetric and neonatal outcomes by maternal BMI for women delivering at The Northern Hospital, with a particular focus on outcomes for women with a BMI ≥50kg/m²

METHODS

- A retrospective study in a non-tertiary hospital was undertaken using data from the Birthing Outcome System
- Inclusion criteria: women delivering a singleton infant from 2011-2016 with BMI recorded at first antenatal visit
- Women with weight ≥180kg were transferred to a tertiary centre and were excluded from the study
- Maternal and neonatal outcomes analysed by BMI group (Figure 1)
- Univariate analysis was performed with the chi-square test and Kruskal-Wallis test as appropriate, with a significance level of 0.05
- Multivariate analysis controlled for maternal age, parity, Indigenous status and maternal birth overseas

Figure 1. Study cohort

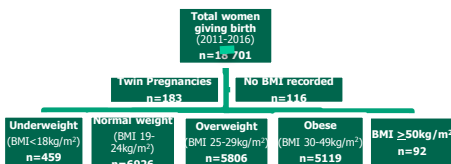
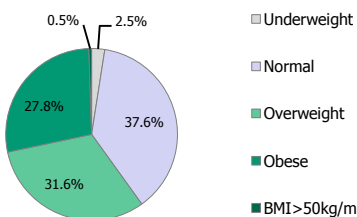


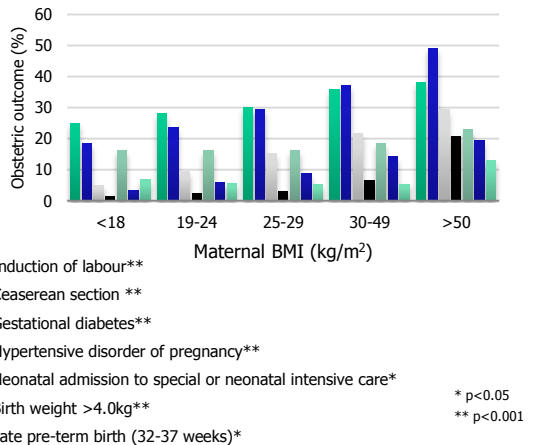
Figure 2. Maternal BMI distribution



RESULTS

- Of the 18 518 singleton deliveries, 18 402 (99.4%) of women had a BMI recorded at the first antenatal visit and were included (Figure 1)
- Maternal BMI was associated with increased rates of obstetric and neonatal complications and interventions (Figure 3)
- 92 women with BMI ≥50kg/m² gave birth during the study period (0.5%)** (Figure 2)
 - Of this group, **48% required a cesarean section**, 38% required an induction of labour, 29% developed gestational diabetes and 22% developed a hypertensive disorder of pregnancy
 - 20% of their infants had a birth weight >4.0kg, 23% required admission to a special/intensive care unit and 13% were born late pre-term
 - Compared to obese mothers with BMI 30-49kg/m², those with BMI ≥50kg/m² were **more likely to develop a hypertensive disorder of pregnancy** (aOR 3.55, 95%CI 1.79-7.73) and to **deliver a late-preterm infant** (aOR 2.54, 95%CI 1.31-4.58)

Figure 3. Obstetric outcomes by maternal BMI



CONCLUSION

- Obesity is prevalent in our antenatal population**
 - Over 1 in 4 mothers are obese, compared to national estimates of 1 in 5
- We provide new Australian data on obstetric outcomes for women with BMI ≥50kg/m² delivering in a non-tertiary setting and confirm that they are at **highest risk of obstetric and neonatal complications** and medical intervention
- Health services need to anticipate future needs of our antenatal population and provide appropriate infrastructure for optimal care**

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