A Weighty Problem.... the Association between Body Mass Index and Emergency Caesarean Delivery

Amy Gavin

Dept. of Obstetrics & Gynaecology, Lyell McEwin Hospital, Elizabeth Vale

Amy.Gavin@sa.gov.au

Government of South Australia
SA Health

Introduction:

Obesity is a major public health issue in Australia with an increasing prevalence. Obesity is well known to be a significant risk factor contributing to burden of disease[1]. This studies purpose was to measure the association between body mass index (BMI), parity and risk of emergency caesarean delivery.

Methods:

Retrospective study of 2453 women ≥37 weeks gestation who delivered at a tertiary care centre between Jan-Dec 2017. Exclusion criteria; instrumental deliveries, elective LSCS. Data was extracted from the perinatal database. Relationships between WHO definitions of BMI[2], parity and incidence of caesarean delivery were statistically analysed for relative risk with 95% confidence interval and significance test (p level).

Results:

58.4% of primiparous & 61.4% of multiparous women were overweight or obese with a 36% increased risk of having emergency caesarean delivery (95%CI 1.12-1.65 p=0.0018) compared to woman of normal weight. Primiparous overweight or obese women were more likely to require emergency caesarean delivery than comparable multiparous women. Statistical significance was attained in primiparous overweight and obese class 2 and 3 and multiparous obese class 1.

Weight Status	BMI (kg/m²)	Normal Vaginal Delivery (n)	Em LSCS (n) / (%)		Relative Risk
Primiparous					
Underweight	< 18.5	30	5	14%	RR 0.56 95%CI 0.24-1.27 p=0.1657
Normal	18.5 – 24.9	263	91	26%	
Overweight	25.0 – 29.9	173	90	34%	**RR 1.33 95%CI 1.04-1.69 p=0.0215**
Obese Class 1	30.0 – 34.9	104	40	28%	RR 1.08 95%CI 0.78-1.48 p=0.6322
Obese Class 2	35.0 – 39.9	46	28	38%	**RR 1.47 95%CI 1.04-2.07 p=0.0265**
Obese Class 3	≥ 40	31	33	52%	**RR 2.00 95%CI 1.49-2.69 p=<0.0001**
Multiparous					
Underweight	< 18.5	30	3	9%	RR 1.43 95%CI 0.46 – 4.43 p=0.5263
Normal	18.5 – 24.9	519	35	6%	
Overweight	25.0 – 29.9	397	41	9%	RR 1.48 95%CI 0.96 - 2.28 p=0.0753
Obese Class 1	30.0 – 34.9	215	27	11%	**RR 1.76 95%CI 1.09 – 2.85 p=0.0199**
Obese Class 2	35.0 – 39.9	117	10	8%	RR 1.24 95%CI 0.63 - 2.44 p=0.523
Obese Class 3	≥ 40	115	10	8%	RR 1.26 95%CI 0.64 - 2.48 p=0.685

Discussion:

The increasing BMI of patients is increasing risk of caesarean delivery. Quantifying increased risk may assist counseling patients antenatally on realistic expectations for attaining normal vaginal delivery. Ideally educating patients prior to conception may encourage attainment of a healthy BMI and reduce need for future operative delivery.

References
1 WHO. Global Health Observatory data. Mean Body Mass Index (BMI). www.who.int/gho/ncd/risk_factors/bmi_text/en/. Accessed 14/5/2018.
2 WHO. Global Strategy on Diet, Physical activity & Health. What is overweight & Obesity. www.who.int/dietphysicalactivity/childhood_what/en/. Accessed 14/5/2018.