68 Obesity in pregnancy: what's next? Long-term cardiovascular morbidity in a follow-up period of more than a decade

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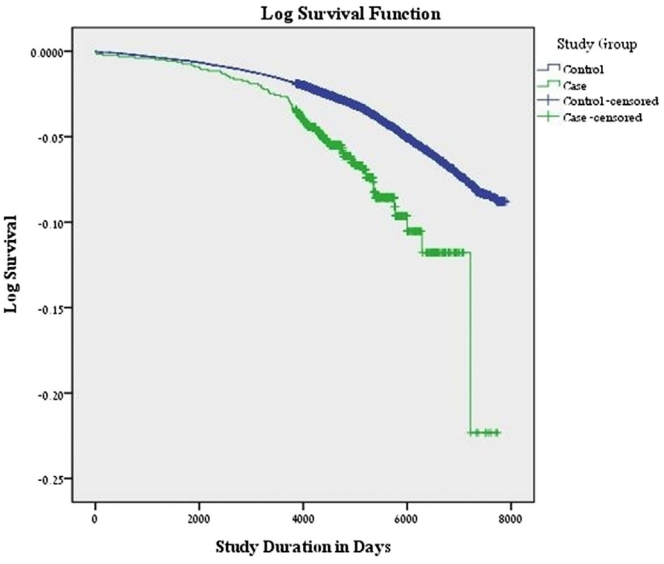
OBJECTIVE: To investigate whether obesity in pregnancy is an independent risk factor for subsequent long-term cardiovascular morbidity during a follow-up period of more than a decade.

STUDY DESIGN: Data were analyzed from consecutive pregnant women who delivered between 1988 and 1999, and were followed-up retrospectively until 2010. Long-term cardiovascular morbidity was compared among women with and without obesity in pregnancy (defined as maternal pre-pregnancy body mass index (BMI) of 30 kg/m2 or more). Cardiovascular morbidity was divided into four categories including simple and complex cardiovascular events and invasive and noninvasive cardiac procedures. Kaplan-Meier survival curves were used to compare cumulative incidence of cardiovascular hospitalizations. Cox proportional hazards models were used to estimate the adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) for long term cardiovascular hospitalizations.

RESULTS: During the study period 46,688 women met the inclusion criteria; 1221 (2.6%) suffered from obesity during pregnancy. During a follow up period of more than ten years, patients with obesity had higher risk for cardiovascular hospitalizations (Kaplan-Meier survival analysis, P<0.001; Figure). Specifically, obese patients had higher rates of simple cardiovascular events and non-invasive procedures (Table). These complications tended to occur at a younger age (mean 4871±950 days vs. 5060±1140 days from their pregnancy; p=0.001). In a Cox proportional hazards model, adjusted for diabetes mellitus, preeclampsia and maternal age, obesity was independently associated with long-term cardiovascular hospitalizations (adjusted HR 1.33, 95% CI 1.17-1.5).

CONCLUSION: Obesity during pregnancy is an independent risk factor for long-term cardiovascular morbidity, and these complications tend to occur at a younger age. Obese parturients might benefit from cardiovascular risk screening that could lead to early detection and secondary prevention of cardiovascular morbidity.

Kaplan-Meier hazard function analysis curve for cardiovascular associated hospitalization of patients with and without obesity



Cardiovascular hospitalizations in patients with and without obesity

	Obesity (n= 1213)	No obesity (n= 46,498)	OR	CI (95%)	P value
Cardiac non invasive diagnostic procedures	2.0%	1.1%	1.9	1.2-2.8	0.002
Invasive diagnostic procedures	0.7%	0.4%	1.6	0.72-3.28	0.182
Simple cardiovascular events	5.1%	2.6%	2.0	1.53-2.6	0.001
Complex cardiovascular events	0%	0.1%	0.97	0.97-0.98	0.212
Total cardiovascular hospitalizations	6.6%	3.6%	1.8	1.4-2.3	0.001

69 Excess gestational weight gain (GWG) is associated with alterations in metabolic function of the microbiome

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OBJECTIVE: Pathologic states (obesity) and physiologic states (pregnancy) are accompanied by changes in the microbiome. Unique to pregnancy is a physiologic state of increasing adiposity, although this can cross-over to pathologic if weight gain is excessive. Our aim was to investigate whether excess gestational weight gain affects the microbiome in pregnancy and, if so, the biologic significance.

STUDY DESIGN: Placentas (n=243) were rigorously and uniformly collected from term and preterm gravidae and stratified by IOM GWG guidelines. Genomic DNA was extracted (MoBIO), and metagenomic libraries (n=26) were subjected to shotgun sequencing (WGS; Illumina).

RESULTS: 16S rRNA pyrosequencing (1A) revealed no significant difference in between-subject beta-diversity by virtue of obesity (p=0.22), nor excess GWG (p=0.189). However, among gravidae with preterm births, there was significant clustering by excess GWG (p=0.022), and species richness (abundance across multiple taxa) was notably decreased. Among all gravidae, detailed analysis of WGS with linear discriminant analysis (LDA) identified microbial genus