

SDB AND PREGNANCY: WHAT IS NEW?



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Disclosures

- No industry sponsors

Objectives

- Review the published findings of the NuMom2b study
- Discuss the implications of the new studies
- Delineate the gaps in knowledge



- Funded by NICHD, Office of Women's research
- Sleep substudy funded by NHLBI
- 9 sites, 12 subsites
- Parent study:
 - 10,000 nulliparous women
 - Aims to study predictors and mechanisms behind adverse outcomes

Original Research

Association Between Sleep-Disordered Breathing and Hypertensive Disorders of Pregnancy and Gestational Diabetes Mellitus

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- Subset of the NuMom2b trial
- Nulliparous women
- In home polysomnography
- N=3,3607

Facco et al. Obstet Gynecol. 2017 Jan;129(1):31-41.

- Prevalence of SDB:
 - Early Pregnancy:3.6%
 - Mid pregnancy: 8.3%
- Preeclampsia: 6%

| | GDM | Preeclampsia |
|-----------------|------------------|-----------------|
| Early Pregnancy | 3.47 (1.95-6.19) | 1.94(1.07-3.51) |
| Mid pregnancy | 2.79 (1.63-4.77) | 1.95(1.18-3.23) |

SDB and Pregnancy Outcomes

| Outcomes | Snoring | | | OSA | | | SDB | | |
|--------------------------------|---------|---------|------------------------|----------------|---------|--------------------------|-----|---------|-----------------------|
| | F | P-value | OR (95% CI) | F | P-value | OR (95% CI) | F | P-value | OR (95% CI) |
| Gestational diabetes mellitus | 65% | <0.01 | 2.14 (1.63, 2.81) | 82% | <0.01 | 1.71 (1.23, 2.38) | 72% | <0.01 | 1.95 (1.60, 2.37) |
| Pregnancy-induced hypertension | 0% | 0.72 | 1.80 (1.28, 2.52) | 83% | <0.01 | 1.93 (1.63, 2.28) | 62% | <0.01 | 1.84 (1.53, 2.22) |
| Preeclampsia | 58% | <0.01 | 1.87 (1.27, 2.75) | 78% | <0.01 | 2.63 (1.87, 3.70) | 71% | <0.01 | 2.19 (1.70, 2.82) |
| Birth weight | 33% | 0.22 | 26.54 (-52.53, 105.60) | 93% | <0.01 | -47.46 (-242.09, 147.16) | 91% | <0.01 | 16.75 (-53.53, 87.03) |
| APGAR score | 0% | 0.75 | -0.02 (-0.06, 0.02) | Not applicable | | -1.00 (-2.37, 0.37) | 0 | 0.75 | -0.02 (-0.06, 0.02) |
| Preterm birth | 22% | 0.22 | 1.22 (0.87, 1.70) | 90% | <0.01 | 1.75 (1.21, 2.55) | 71% | <0.01 | 1.47 (1.14, 1.91) |

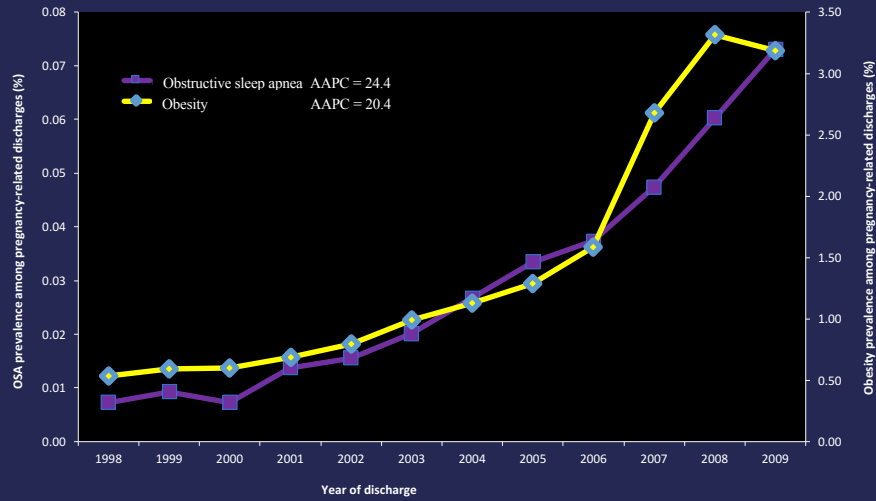
Results are expressed as OR with 95% CI, birth weight, and APGAR are expressed with WMD with 95% CI.

Li et al. Front Neurol. 2018 May 28;9:91

OSA - Pregnancy prevalence

| | Setting | Number of Subjects | Prevalence (%) |
|---------------|---------------|--------------------|----------------|
| Olivarez 2010 | In hospital | 100 | 20 |
| Louis 2012 | Portable | 182 | 15 |
| Facco 2012 | Portable | 114 | 24 |
| Pien 2013 | In laboratory | 105 | 10-26 |
| Facco 2017 | Portable | 3,600 | 3-8 |

OSA and obesity increased over time



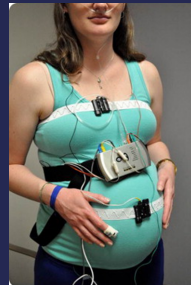
Cain et al. Seminars in Perinatology. Semin Perinatol. 2015 Jun;39(4):304-9.

Diagnostic Testing

Overnight PSG



Portable polysomnography may underestimate AHI



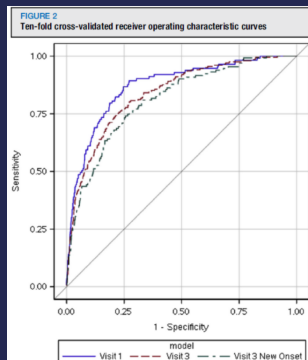
Louis et al. Obstetrics & Gynecology 2012. 119(4):864-868

Should you screen?

- Weak evidence
- What is the goal?
 - Pregnancy risks
 - Perioperative risks
- Short term
 - Pregnancy risks
 - Perioperative risks
- Long term
 - Future health
 - Future pregnancy

Predictors of SDB

- NuMom2b analysis
- Visits
 - 6-13 w6d (n=3,264)
 - 22w0d-29w 6d (n= 2,512)
- Predictors: BMI, age, frequent snoring



Louis, JM et al. Am J Obstet Gynecol. 2018 May;218(5):521.e1-521.e12.

Gaps

- Diagnosis
 - Screening effectiveness
 - Definitions
- Treatment
 - Effectiveness
 - Window of susceptibility
- Mechanisms of disease

Thank you

Questions?