Significantly higher comorbidity of obstructive sleep apnea (OSA) in pregnant women: a meta-analysis study

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Objective: To evaluate the potential relationship between obstructive sleep apnea (OSA) and pregnant patients.

Methods: This meta-analysis was conducted by two independent authors via PubMed, ScienceDirect, and ClinicalTrials.gov with inclusion criteria of (1) published articles investigating the different prevalence rate of OSA in pregnant women and control women without pregnancy, and (2) articles that were conducted in human trials. The exclusion criteria are (1) animal studies, and (2) trials conducted not for the prevalence rate of OSA in pregnancy. We set the primary outcome measure as the prevalence rate of OSA in pregnancy, either determined by self-report or by apnea-hypopnea index (AHI) recorded by polysomnography. The meta-analytic procedure was done upon the presumed potential heterogeneity among the recruited studies with random-effects meta-analysis models to calculate the recruited data.

Results: After excluding forty-five irrelevant articles, total four articles and one clinical trial were eligible for our study. Among them, total 6207 pregnant women (mean age = 30.1) and 1208 controls without pregnancy (mean age = 30.6) were included. The main results of meta-analysis showed that there was significantly higher prevalence of OSA in pregnant women than those without pregnancy (Odds ratio = 1.934, 95% CI = 1.214 to 3.080, P = 0.006) with significant heterogeneity (Q value = 8.03, df = 4, P = 0.091; I^2 =50.16%) and without publication bias via Egger's regression (t value = 0.14, df = 3, P = 0.900). The significant result of meta-analysis would turn out to be statistical insignificance after removing patients of obese controls (Odds ratio = 2.004, 95% CI = 0.889 to 4.516, P = 0.094).

Conclusion: This study showed significantly higher prevalence of OSA in pregnant women but this significance would change to be insignificant after removing patients of obese controls. This indicates that pregnancy alone might not be the potential cause of OSA.