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◇临床医学◇

孕妇阻塞性睡眠呼吸暂停低通气综合征对母婴结局的影响

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摘要:目的 探讨孕妇阻塞性睡眠呼吸暂停低通气综合征(OSAHS)对母婴结局的影响。方法 回顾性分析2016年1月至2017年1月于北京市通州区妇幼保健院产科建档的1 999例孕妇的临床资料。按照病情情况, 其分为OSAHS组和非OSAHS组, OSAHS组593例, 非OSAHS组1 406例, 在妊娠第13周、28周及分娩前调查孕妇睡眠打鼾情况、测量孕妇生理生化指标, 记录产后新生儿资料。比较两组的临床特征、孕妇分娩结局和新生儿结局。结果 OSAHS组的孕前体质指数(BMI)高于非OSAHS组, 产次低于非OSAHS组, 均差异有统计学意义($P < 0.05$)。两组的年龄、孕次相比, 差异无统计学意义($P > 0.05$)。OSAHS组孕妇的妊娠高血压综合征、慢性高血压、子痫前期、慢性高血压并发子痫前期、早产和妊娠糖尿病的发生率(5.23%、4.22%、7.25%、1.52%、24.79%、8.09%)明显高于非OSAHS组(1.99%、2.00%、1.49%、0.21%、14.44%、4.69%), 差异有统计学意义($\chi^2 = 15.250, 21.091, 44.618, 11.885, 30.943, 149.164, P < 0.05$)。孕周[(30.18±4.02)周]明显少于非OSAHS组[(33.60±5.50)周], 差异有统计学意义($t = 16.957, P < 0.05$)。两组的产后出血发生率相比, 差异无统计学意义($P > 0.05$)。OSAHS组的新生儿窒息的发生率、Apgar评分<7分的比例(12.82%、3.36%)均明显高于非OSAHS组(4.62%、0.92%), 差异有统计学意义($\chi^2 = 3.124, 3.295, P < 0.05$)。两组的新生儿体重、巨大儿发生率、胎儿生长受限(FGR)发生率和脐带绕颈发生率相比, 差异无统计学意义($P > 0.05$)。结论 孕妇OSAHS与妊娠高血压综合征、慢性高血压、子痫前期、慢性高血压并发子痫前期、早产和妊娠糖尿病的发生密切相关, 且会影响胎儿发育, 应加强打鼾孕妇的围生期保健, 改善母婴结局。

关键词:睡眠呼吸暂停, 阻塞性; 打鼾; 妊娠并发症; 高血压, 妊娠性; 睡眠; 妊娠结局; 婴儿, 新生

Effect of obstructive sleep apnea hypopnea syndrome on maternal and infant outcome in pregnant women

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Abstract: Objective To explore the effect of obstructive sleep apnea hypopnea syndrome (OSAHS) on the outcome of pregnant women. **Methods** The clinical data of 1999 pregnant women registering at Department of Gynecology and Obstetrics, Maternal and

Child Care Hospital in Tongzhou district of Beijing from January 2016 to January 2017 were analyzed retrospectively. According to their condition, the women were assigned into OSAHS group ($n = 593$) and non-OAHS group ($n = 1406$). The snoring situation of pregnant women at thirteenth weeks, 28 weeks and before delivery was investigated, the physiological and biochemical indexes of pregnant women were measured and the information of the newborn babies was recorded. The clinical characteristics, delivery outcome and neonatal outcome of the two groups were compared. **Results** The pregestational body mass index (BMI) of OSAHS group was higher than that of non-OAHS group, and the number of births was lower than that of non-OAHS group; the difference showed a statistical significance ($P < 0.05$). There were no significant differences in age and gravida between the two groups ($P > 0.05$). The incidences of pregnancy-induced hypertension syndrome, chronic hypertension, preeclampsia, chronic hypertension complicated by preeclampsia, preterm delivery and gestational diabetes in OSAHS group (5.23%, 4.22%, 7.25%, 1.52%, 24.79%, 8.09%) were significantly higher than those in non-OAHS group (1.99%, 2.00%, 1.49%, 0.21%, 14.44%, 4.69%); the differences were statistically significant ($\chi^2 = 15.250, 21.091, 44.618, 11.885, 30\ 943, 149.164$, respectively; $P < 0.05$). Gestational week [(30.18±4.02) weeks] of OSAHS group was significantly shorter than that of non-OAHS group [(33.60±5.50) weeks]; the difference was statistically significant ($t = 16.957, P < 0.05$). There was no significant difference in the incidence of postpartum hemorrhage between the two groups ($P > 0.05$). The incidence of neonatal asphyxia and the proportion of Apgar score < 7 in the OSAHS group (12.82%, 3.36%) were significantly higher than those in the non-OAHS group (4.62%, 0.92%); the differences were statistically significant ($\chi^2 = 3.124, 3.295$, respectively; $P < 0.05$). There were no significant differences between the two groups in terms of neonatal weight, incidence of macrosomia, incidence of fetal growth restriction (FGR) and incidence of umbilical cord around neck ($P > 0.05$). **Conclusions** OSAHS of pregnant women is closely related to the occurrence of pregnancy-induced hypertension syndrome, chronic hypertension, preeclampsia, chronic hypertension complicated by preeclampsia, premature delivery and GDM, which will affect the development of fetus, and we should strengthen the perinatal health care of snoring pregnant women and improve the maternal and infant outcome.

Key words: Sleep apnea, obstructive; Snoring; Pregnancy-induced complications; Hypertension, pregnancy-induced; Sleep; Pregnancy outcome; Infant, newborn

孕妇妊娠期因激素水平、体质量等的变化,会影响其呼吸功能,出现睡眠打鼾、睡眠质量差等现象。胎儿在宫内的生长发育过程复杂,可因母体缺氧导致心率下降,长期缺氧还会导致胎儿宫内生长迟缓,导致不良的妊娠结局^[1-2]。目前,国内外关于孕妇阻塞性睡眠呼吸暂停低通气综合征(OSAHS)对母婴结局的影响的研究较少,打鼾是OSAHS最常见的临床表现,研究其对妊娠结局的影响具有重要的临床意义。为此,本研究对孕妇孕期OSAHS的现状展开研究,以分析OSAHS对母婴结局的影响,现报告如下。

1 资料与方法

1.1 一般资料 回顾性分析 2016 年 1 月至 2017 年 1 月于北京市通州区妇幼保健院产科建档的 1 999 例孕妇的临床资料。纳入标准:①单胎妊娠者;②具有完整的产前检查记录,临床资料齐全者;③病人或其近亲属知情同意,本研究符合《世界医学协会赫尔辛基宣言》相关要求。排除标准:①有早产,晚期流产史者;②有子宫腔手术史和子宫颈手术史者;③羊水过多、胎膜早破、宫腔感染、宫缩等者;④因认知功能损伤而不能参加者。孕妇年龄范围为 23 ~ 41 岁,年龄(30.26±4.54)岁,孕前体质量指数

(BMI)为(22.72±3.59),孕次范围为 1~4 次,孕次(1.92±0.69)次,产次范围为 1~4 次,产次(1.30±0.48)次。按照病情状况,将其分为 OSAHS 组和非 OSAHS 组,OSAHS 组 593 例,非 OSAHS 组 1406 例,两组孕妇的年龄、孕次等临床特征比较差异无统计学意义($P > 0.05$)。

1.2 方法 所有孕妇在妊娠早、中、晚期,即第 13 周、28 周及分娩前均接受问卷调查,内容包括:①一般资料:姓名、民族、居住地、出生年月、文化程度、职业、基本疾病史等;②生活习惯:孕期是否吸烟、饮酒,睡眠打鼾情况。问卷问题由产妇与其共同生活的近亲属共同回答,以确保信息的准确性。同时测量入选研究的孕妇生理生化指标:身高、体质量、BMI[BMI = 体质量/身高²(kg/m²)];记录新生儿资料:出生体质量、早产、巨大儿、胎儿生长受限(fetal growth restriction, FGR)、脐带绕颈、窒息以及新生儿 1min 和 5 min 新生儿 Apgar 评分等情况。Apgar 评分可评价新生儿出生后的身体状况,评分 10 分者为正常新生儿,低于 7 分考虑有轻度窒息,低于 4 分考虑有重度窒息。

1.3 观察指标 ①比较两组的临床特征;②比较两组的孕妇分娩结局;③比较两组的新生儿结局;

1.4 统计学方法 采用SPSS 16.0统计学软件进行统计分析。计量资料以 $\bar{x} \pm s$ 表示,采用 t 检验;计数资料以例(%)表示,采用 χ^2 检验。 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组的临床特征比较 OSAHS组的孕前BMI高于非OSAHS组,产次低于非OSAHS组,差异有统计学意义($P < 0.05$)。两组的年龄、孕次相比,差异无统计学意义($P > 0.05$)。见表1。

表1 OSAHS组与非OSAHS组孕妇共1 999例的临床特征比较 $\bar{x} \pm s$

组别	例数	年龄/岁	孕前BMI	孕次	产次
非OSAHS组	1 406	30.34±3.90	21.68±3.12	1.91±1.13	1.34±0.49
OSAHS组	593	30.19±4.02	23.15±3.53	1.94±1.13	1.28±0.46
t 值		0.643	1.957	0.518	1.337
P 值		0.421	<0.001	0.452	0.020

注:OSAHS为阻塞性睡眠呼吸暂停低通气综合征,BMI为体质指数

2.2 两组孕妇分娩结局的比较 OSAHS组孕妇的妊娠高血压综合征、慢性高血压、子痫前期、慢性高血压并发子痫前期、早产和妊娠糖尿病(gestational diabetes mellitus, GDM)的发生率明显高于非OSAHS组,孕周明显短于非OSAHS组,差异有统计学意义($P < 0.05$)。两组的产后出血发生率相比,差异无统计学意义($P > 0.05$)。见表2。

2.3 两组新生儿结局的比较 OSAHS组的新生儿窒息的发生率、Apgar评分<7分的高于非OSAHS组,差异有统计学意义($P < 0.05$)。两组的新生儿体

质量、巨大儿发生率、FGR发生率、脐带绕颈发生率相比,差异无统计学意义($P > 0.05$)。见表3。

3 讨论

OSAHS是因上气道狭窄,气流通过受阻,进而产生涡流振动软腭而形成的^[3]。长期的睡眠打鼾严重影响自身健康,在睡眠过程中可能出现呼吸暂停与低氧血症,进而发生阻塞性睡眠呼吸暂停低通气综合征,还可引发咽壁软组织水肿、神经肌肉呼吸控制失衡等诸多不良后果^[4-6]。

妊娠期孕妇血容量的增加会造成鼻充血,致使咽腔和鼻腔狭窄,与此同时,雌激素的分泌可引起机体充血、黏膜水肿,上气道黏膜脆性增强,使得鼻咽部对气流的通透性降低,易引起鼻塞,在上述因素的共同作用下,孕妇睡眠发生OSAHS的概率较高,在妊娠晚期尤为显著^[7-8]。

在本研究中,相较于非OSAHS孕妇,OSAHS孕妇的孕前BMI明显更高,产次更低。妊娠期间的呼吸生理变化、母体内分泌代谢发生明显改变等因素都可能使BMI、腹围等增加,而神经、肌肉的张力变化使睡眠时呼吸道阻塞,致夜间睡眠效率低,睡眠质量差,且在初产妇中的表现更为明显^[9-10]。因此控制体质量,适当运动和适当控制饮食对于改善孕妇睡眠会有益处。

本研究结果显示,OSAHS孕妇的妊娠高血压综合征、慢性高血压、子痫前期、慢性高血压并发子痫前期、早产和GDM的发生率均明显高于非OSAHS孕妇,且其孕周较短,早产率明显更高,表明OSAHS孕妇的妊娠结局更差。孕妇的子宫增大,压迫腹主动脉造成有效循环血量降低,合并睡眠打鼾者,可

表2 OSAHS组与非OSAHS组孕妇共1 999例分娩结局比较

组别	例数	妊娠高血压综合征/例(%)	慢性高血压/例(%)	子痫前期/例(%)	慢性高血压并发子痫前期/例(%)	产后出血/例(%)	GDM/例(%)	孕周/(周, $\bar{x} \pm s$)	早产/例(%)
非OSAHS组	1 406	28(1.99)	40(2.00)	21(1.49)	3(0.21)	126(8.96)	203(14.44)	33.60±5.50	66(4.69)
OSAHS组	593	31(5.23)	25(4.22)	43(7.25)	9(1.52)	56(9.44)	147(24.79)	30.18±4.02	48(8.09)
$\chi^2(t)$ 值		15.250	21.091	44.618	11.885	0.121	30.943	16.957	149.164
P 值		<0.001	<0.001	<0.001	<0.001	0.733	<0.001	<0.001	<0.001

注:GDM为妊娠糖尿病,OSAHS为阻塞性睡眠呼吸暂停低通气综合征

表3 OSAHS组与非OSAHS组孕妇共1 999例分娩新生儿结局比较

组别	例数	体质量/(g, $\bar{x} \pm s$)	巨大儿/例(%)	FGR/例(%)	脐带绕颈/例(%)	窒息/例(%)	1 min Apgar评分<7分/例(%)	5 min Apgar评分<7分/例(%)
非OSAHS组	1 406	3 361.12±1 049.93	36(2.56)	19(1.35)	163(11.59)	8(0.57)	65(4.62)	13(0.92)
OSAHS组	593	3 327.89±515.90	18(3.04)	9(1.52)	65(10.96)	10(1.69)	76(12.82)	20(3.36)
$\chi^2(t)$ 值		(0.256)	0.314	0.078	0.105	5.843	42.706	15.396
P 值		0.340	0.309	0.772	0.654	0.019	0.000	0.000

注:FGR为胎儿生长受限,OSAHS为阻塞性睡眠呼吸暂停低通气综合征

引起胸腔内负压增大、下腔静脉回心血量增多,自主交感神经的活动性增加,儿茶酚胺类物质的释放增多,临床表现为血压上升^[11-12]。Franklin等^[13]的研究报道,23%的孕妇在分娩前1周发生了OSAHS,并且统计学分析结果表明习惯性打鼾是高血压和子痫前期的危险因素。研究表明,OSAHS孕妇破坏了血压的正常调节机制,损害了生理性血压调节反射,其血液黏度增大,通气/血流比值降低,肺部气体弥散功能指标异常,这些变化增大了上述孕产期并发症的发生概率^[14-16]。

本研究结果还显示,OSAHS孕妇的新生儿窒息的发生率和Apgar评分明显更高,可以看出,孕产妇孕期OSAHS是一个比较严重的睡眠障碍问题。打鼾可使胎儿氧和营养物质的供应缺乏,使胎儿的生长发育受限、窒息等发生率升高,而早产率的上升也可能使胎儿因胎龄小、身体器官发育不成熟,免疫功能及应激能力低等原因而引发宫内窘迫及新生儿窒息等,新生儿Apgar评分的增高也表明了OSAHS可影响胎儿的发育^[17-18]。

目前,国内对于孕妇妊娠期由于OSAHS引起的睡眠障碍问题关注较少^[19]。临床上应对孕妇加强血压监测和随访和OSAHS相关知识的教育,使其对该病的危害有所了解,密切关注其夜间鼾声和白天嗜睡情况,防止病情恶化,并及时治疗并发症和并存病,以改善母婴结局^[20-21]。

综上所述,OSAHS孕妇与妊娠高血压综合征、慢性高血压、子痫前期、慢性高血压并发子痫前期、早产和GDM的发生密切相关,且会影响胎儿发育,应加强OSAHS孕妇的围生期保健,如通过饮食控制从而减轻体质量指数,或通过改变睡眠姿势改善孕期OSAHS情况等,从而改善母婴结局。

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