

DOI: 10.13241/j.cnki.pmb.2014.06.031

妊娠期糖尿病与妊娠结局的临床分析

缪嘉燕 赵亭亭 方 敏 王瑞东 李 霞

(南京医科大学附属南京妇幼保健院 江苏南京 210000)

摘要 目的:探讨妊娠期糖尿病(GDM)对孕妇妊娠结局和胎儿健康的影响。**方法:**回顾性分析 2009 年 8 月~2012 年 12 月在我院分娩的 184 例 GDM 患者及 200 例健康孕妇的临床资料,并对两组孕妇的妊娠结局进行比较。**结果:**GDM 组妊高症 35 例(19.0%)、羊水过多 17 例(9.2%)、早产 21 例(11.4%)、产后出血 14 例(7.6%)、产褥感染 12 例(6.5%),发生率均显著高于对照组($P<0.05$);GDM 组中发生巨大儿 48 例(26.1%)、新生儿低血糖 31 例(16.8%),与对照组比较均显著增高($P<0.05$),而胎儿宫内窘迫的发生率(3.3%)也较对照组升高,但差异无统计学意义($P>0.05$);GDM 组剖宫产 141 例(76.6%),阴道产 43 例(23.4%),剖宫产比例较对照组显著升高($P<0.05$)。**结论:**GDM 对孕妇的妊娠结局有不利影响,孕妇应加强孕期保健,规范治疗妊娠期糖尿病,减少各种并发症的发生。

关键词:妊娠期糖尿病;妊娠结局;并发症

中图分类号:R714 文献标识码:A 文章编号:1673-6273(2014)06-1121-03

Clinical Analysis of Gestational Diabetes and Pregnancy Outcome

MIAO Jia-yan, ZHAO Ting-ting, FANG Min, WANG Rui-dong, LI Xia

(Nanjing Maternal and Child Health Hospital affiliated to Nanjing Medical University, Jiangsu, Nanjing, 210000)

ABSTRACT Objective: To study the influence of gestational diabetes mellitus (GDM) on the outcome of gravida and fetal health.

Methods: The clinical data of 184 cases of GDM patients and 200 cases of healthy gravida were retrospectively analyzed, the pregnancy outcome of two groups was compared. **Results:** In GDM group, 35 cases of pregnant period hypertensive disorders (19%), 17 cases of polyhydramnios(9.2%), 21 cases of premature delivery(11.4%), 14 cases of postpartum hemorrhage(7.6%), 12 cases of puerperal infection(6.5%) were found, which were all significantly higher than those in the control group($P<0.05$); 48 cases of macrosomia (26.1%), 31 cases of neonatal hypoglycemia (16.8%) were all significantly higher than those in the control group ($P<0.05$), and fetal distress rate (3.3%) was higher than that of the control group, but there was no significant difference between two groups ($P>0.05$). In GDM group, 141 cases of cesarean section (76.6%), 43 cases of vaginal delivery (23.4%), and the rate of cesarean section were all significantly increased compared with the control group ($P<0.05$). **Conclusion:** GDM had adverse effects on the outcome of pregnancy, gravida should strengthen the health care during pregnancy, and accept the standard treatment of gestational diabetes mellitus, decrease the complications.

Key words: Gestational diabetes; Pregnant outcome; Complications

Chinese Library Classification(CLC): R714 Document code: A

Article ID: 1673-6273(2014)06-1121-03

妊娠期糖尿病(gestational diabetes mellitus, GDM)是指妊娠期首次发生或发现的糖耐量不同程度异常的疾病^[1-3]。近年来,随着人们生活水平的提高,GDM 的发病率逐年增高。GDM 对孕妇和胎儿可产生较大的损害,引起孕妇妊高征、早产、感染、产后出血、巨大胎儿等并发症^[4-6]。本研究通过对 184 例 GDM 孕妇的妊娠结局进行分析,旨在探讨 GDM 与妊娠结局和胎儿健康的关系,现报告如下。

1 对象与方法

1.1 一般资料

选择 2009 年 8 月~2012 年 12 月在南京市妇幼保健院住院分娩的 184 例妊娠合并糖尿病的孕妇为观察对象,孕前无糖尿病史,无其他急慢性疾病史,年龄为 23~38 岁,平均年龄为(29.2±7.6)岁;其中经产妇 22 例,初产妇 162 例。同时,随机选择 200 例同期入院的无糖尿病高危因素的正常孕妇为对照组,年龄 21~36 岁,平均年龄为(27.4±8.5)岁;其中经产妇 20 例,初产妇 180 例。两组患者的年龄、孕产次及合并症等情况比较,差异无统计学意义($P>0.05$),具有可比性。

1.2 诊断标准

妊娠期糖尿病(GDM)的诊断标准^[7]:①患者 24 周以后进行空腹血糖 $\geq 5.1\text{mmol/L}$;②患者口服进行 OGTT 实验(75 g 葡萄糖口服葡萄糖耐量试验):空腹血糖 5.1mmol/L,餐后 1 h 时 10mmol/L,2 h 时 8.5mmol/L,有一项或一项以上达到或超过正

作者简介:缪嘉燕(1984-),女,住院医师,从事产科专业,

E-mail: miaomiaojiaoyan@163.com

(收稿日期:2013-07-12 接受日期:2013-08-14)

常值,可诊断为妊娠期糖尿病。妊娠并发症诊断标准^[1]:(1)巨大儿:胎儿体重 ≥ 4 kg者;(2)羊水过多:指妊娠期间羊水量超过2 000 mL,产前B超羊水指数 > 18 cm或羊水最大暗区垂直深度测定值 > 7 cm;(3)妊娠期高血压疾病(子痫前期):血压 $\geq 140/90$ mm Hg(1 mmHg=0.133 kPa),孕20周后,24 h尿蛋白 ≥ 300 mg或尿蛋白(+);(4)产后出血:指胎儿娩出后24 h内出血量超过500 mL者;(5)早产:指妊娠满28周至不满37足周分娩者。

1.3 治疗方法

1.3.1 饮食控制、运动治疗 营养科营养师根据孕妇体重、孕周期及孕妇血糖情况计算总热量,使血糖控制在正常范围之内。指导患者进行适当的运动,特别是肥胖的孕妇,在餐后做30min有节律的运动,如散步,运动时心率保持在120次/min以内,避免剧烈运动^[2]。血糖 > 16.8 mmol/L,或先兆早产,或者合并其他严重并发症者不适于进行运动。其中175例患者采用饮

食控制加运动治疗,血糖控制在正常范围内。

1.3.2 药物治疗 9例患者经过上述处理之后,血糖仍控制不了,给予胰岛素治疗,胰岛素的用量根据血糖调整,直至血糖控制满意。

1.4 统计学分析

所有数据分析均使用SPSS 12.0软件,计量资料采用t检验,计数资料比较采用 χ^2 检验, $P<0.05$ 为差异有统计学意义。

2 结果

2.1 GDM组与对照组的并发症的比较

GDM组孕妇妊娠期高血压(妊高症)35例、羊水过多17例、早产21例、产后出血14例、产褥感染12例,发生率均明显高于对照组,差异有统计学意义($P<0.05$),见表1。

表1 两组孕妇并发症的发生情况比较

Table 1 Comparison of the incidence of pregnant complications between two groups

Groups	Cases	Pregnancy-induced hypertension	Hydramnion	Premature birth	Postpartum hemorrhage	Puerperal infection
GDM group	184	35(19.0%)	17(9.2%)	21(11.4%)	14(7.6%)	12(6.5%)
Control group	200	12(6%)	6(4.5%)	8(4%)	5(2.5%)	4(1%)
χ^2		15.128	6.625	7.543	5.318	4.907
P value		0.000	0.010	0.006	0.021	0.027

2.2 GDM组与对照组 GDM组与对照组新生儿发病率的比较

GDM组发生巨大儿48例、新生儿低血糖31例,与对照组

比较,差异有统计学意义($P<0.05$),而胎儿宫内窘迫的发生率虽较对照组升高,但差异无显著性意义($P>0.05$),见表2。

表2 两组新生儿发病率的比较

Table 2 Comparison of the neonatal morbidity rate between two groups

Groups	Cases	Giant baby	Glucopenia	Intrauterine distress
GDM group	184	48(26.1%)	31(16.8%)	6(3.3%)
Control group	200	24(12%)	16(10.5%)	2(1%)
χ^2		12.483	6.984	2.401
P value		0.000	0.008	0.121

2.3 GDM组与对照组分娩方式的比较

GDM组剖宫产141例,阴道产43例;对照组剖宫产76

例,阴道产124例。两组剖宫产率和阴道产率比较差异有统计学意义($P<0.05$),见表3。

表3 两组孕妇分娩方式的比较

Table 3 Comparison of the childbirth way between two groups

Groups	Cases	Uterine-incision delivery	Vaginal birth
GDM group	184	141(76.6%)	43(23.4%)
Control group	200	76(38%)	124(62%)
χ^2		58.192	58.192
P value		0.000	0.000

3 讨论

妊娠期由于血容量增加、血液稀释、胰岛素相对不足,以及多种激素的影响,容易导致孕妇出现胰岛素抵抗及不同程度的

糖耐量异常,从而发生GDM。近年来,随着人们生活水平的提高,妊娠合并糖尿病的发病率逐年上升,妊娠合并糖尿病导致孕妇和胎儿的并发症的发生率也明显增高,如引起孕妇感染、早产及妊高征、巨大胎儿等并发症等^[8,9]。

本研究 184 例妊娠合并糖尿病患者中, 发生妊高症 35 例 (19.0%)、羊水过多 17 例 (9.2%)、早产 21 例 (11.4%)、产后出血 14 例 (7.6%)、产褥感染 12 例 (6.5%), 各项并发症的发生率较正常健康孕妇均显著增高。已有研究表明, 妊娠发生高血压疾病的可能性较非糖尿病的孕妇高 3~5 倍, 且妊娠合并糖尿病易导致胎儿高渗性利尿致, 引起羊水过多。妊高症、羊水过多及胎儿宫内窘迫常导致早产的发生, 已有研究表明妊娠合并糖尿病患者早产发生率为 10%~25%^[10]。糖尿病造成白细胞多种功能缺陷, 导致孕期及产时易发生霉菌性阴道炎、泌尿系感染、产后出血及产褥感染等现象^[11]。

本组研究结果表明, GDM 的孕妇中发生巨大儿 48 例 (26.1%)、新生儿低血糖 31 例 (16.8%), 与正常健康孕妇比较均显著增高, 而胎儿宫内窘迫的发生率 (3.3%) 虽较正常健康孕妇升高, 但差异无统计学意义。巨大儿是 GDM 孕妇中最常见的并发症之一, 高血糖可持续通过胎盘引起胎儿高血糖, 刺激胎儿胰岛素分泌增加, 胎儿生长加速, 从而形成巨大儿^[12-14]。据杨慧霞等^[15] 研究报道, GDM 患者未治疗组巨大儿发生率高达 50%。在高胰岛素血症的存在下, 新生儿出生后体内不能得到充足的葡萄糖, 导致新生儿低血糖的发生, 其发生率高达 34%~54%。同时, 胎儿血糖升高后, 生长加速, 肌体耗氧加大, 导致胎儿宫内慢性缺氧, 导致胎儿宫内窘迫的发生率大大增加, 甚至发生胎儿的死亡。本研究还比较了 GDM 孕妇和正常健康孕妇的分娩方式, 结果显示 GDM 孕妇剖宫产 141 例 (76.6%), 剖宫产比例显著高于正常健康孕妇, 这可能与 GDM 患者及胎儿并发症的发生密切相关。

综上所述, 妊娠合并糖尿病易导致孕妇及胎儿诸多并发症的发生。因此, 对妊娠合并糖尿病的孕妇应进行规范化管理, 制定合理的饮食, 同时结合运动疗法, 当血糖水平在饮食和运动无法控制的情况下进行胰岛素治疗, 使血糖得到有效的控制, 可减少孕妇及胎儿并发症的发生, 改善妊娠结局^[16-18]。妊娠期妇女应高度重视血糖的监测, 做到早发现、早治疗, 降低并发症的发生, 从而减少对母体及胎儿的损害。

参考文献 (References)

- [1] 廖泰平, 郑建华. 妇产科学[M]. 第 2 版. 北京: 北京大学医学出版社, 2010: 189-192
- Liao Qin-ping, Zheng Jian-hua. Obstetrics and Gynecology [M]. second edition. Beijing: Peking University Medical Press, 2010: 189-192
- [2] 尚强. 43 例妊娠合并糖尿病的临床治疗与分析 [J]. 中国民康医学, 2010, 22(19): 2474-2475
- Shang Qiang. 43 cases of pregnancy complicated with diabetes diagnosis and treatment of the [J]. National Medical Journal of China, 2010, 22 (19): 2474-2475
- [3] 张文静, 于连梅, 梁宪红, 等. 妊娠合并糖尿病与母婴并发症关系的探讨[J]. 中国预防医学杂志, 2009, 10(11): 1023-1025
- Zhang Wen-jing, Yu Lian-mei, Liang Xian-hong, et al. Relationship between pregnancy diabetes and maternal-neonatal complications of [J]. Chinese Journal of preventive medicine, 2009, 10 (11): 1023-1025
- [4] 饶芸, 张新清, 李江, 等. 妊娠期糖代谢异常与妊娠结局 [J]. 中国妇幼保健, 2012, 23(27): 3578-3580

- Rao Yun, Zhang Xin-qing, Li Jiang, et al. Abnormal glucose metabolism during pregnancy and pregnancy outcome [J]. Maternal and child health care of China, 2012, 23 (27): 3578-3580
- [5] 蒋利华, 姚珍薇. 妊娠期糖尿病与妊娠结局的分析 [J]. 重庆医学, 2006, 35(10): 884-885
- Jiang Li-hua, Yao Zhen-wei. The analysis of gestational diabetes and clinical outcome [J]. Chongqing medical journal, 2006, 35 (10): 884-885
- [6] 侯海燕. 妊娠期糖尿病诊治与新生儿结局的相关性分析[J]. 中国社区医师, 2013, 15(10): 86
- Hou Hai-yan. Correlation between gestational diabetes diagnosis and neonatal outcome of pregnancy analysis [J]. Chinese community doctors, 2013, 15(10): 86
- [7] 乐杰. 妇产科学[M]. 第 6 版. 北京: 人民卫生出版社, 2005: 159-161
- Le Jie. Obstetrics and gynecology[M]. Sixth edition. Beijing: People's Medical Publishing House, 2005: 159-161
- [8] 洪莹, 黄春琴. 早期干预对妊娠期糖尿病妊娠结局的影响 [J]. 临床医学, 2010, 30(1): 37-38
- Hong Ying, Huang Chun-qin. The effect of gestational diabetes early intervention on pregnancy outcome [J], Clinical medicine, 2010, 30 (1): 37-38
- [9] 李红, 周嘉强. 妊娠糖尿病研究进展 [J]. 浙江医学, 2009, 31(9): 1194-1196
- Li Hong, Zhou Jia-qiang. Research progress of gestational diabetes [J]. Zhejiang medical journal, 2009, 31 (9): 1194-1196
- [10] 刘晴, 刘陶. 妊娠期糖尿病病因研究进展 [J]. 中国医刊, 2008, 43 (12): 27-28
- Liu Jing, Liu Tao. Research progress in etiology of diabetes during pregnancy [J]. Chinese medical journal, 2008, 43 (12): 27-28
- [11] 马晓玲, 高云荷, 董玉英, 等. 糖尿病合并妊娠和妊娠期糖尿病母儿并发症诊治探讨[J]. 实用妇产科杂志, 2005, 21(8): 492-494
- Ma Xiao-ling, Gao Yun-he, Dong Yu-ying, et al. Study of pregnant women with diabetes mellitus and diabetic complication diagnosis and treatment of pregnancy [J]. Journal of Practical Gynecology and obstetrics, 2005, 21 (8): 492-494
- [12] 刘俊茹, 李乃君. 妊娠期糖尿病对妊娠结局的影响[J]. 中国妇幼保健, 2011, 14(16): 2110-2112
- Liu Jun-ru, Li Nai-jun. Influence on pregnancy outcome in gestational diabetes mellitus [J]. maternal and child health care of China, 2011, 14 (16): 2110-2112
- [13] 肖苑玲, 潘石蕾, 陈炜, 等. 妊娠期糖尿病与妊娠并发症的相关性 [J]. 广东医学, 2012, 23(33): 3575-3576
- Xiao Yuan-ling, Pan Shi-lei, Chen Wei, et al. The relationship of gestational diabetes and pregnancy complications [J]. Guangdong medicine, 2012, 23 (33): 3575-3576
- [14] 陈丹青, 赵慧赞. 妊娠合并糖代谢异常孕妇血脂水平与围产结局的关系[J]. 中华妇产科杂志, 2007, 42(6): 366
- Chen Dan-qing, Zhao Hui-yun. The pregnancy in pregnant women with abnormal glucose metabolism and lipid levels and outcomes relationship[J]. Journal of Obstetrics 2007, 42(6): 366

- [2] 曹小娟, 彭志勇, 李胜利. 胎儿肢体产前超声诊断进展[J]. 中华医学超声杂志(电子版), 2011, 8(1): 158-164
Cao Xiao-juan, Peng Zhi-yong, Li Sheng-li. Review of prenatal ultrasound diagnosis for fetal limbs malformation[J]. Chin J Med Ultrasound (Electronic Edition), 2011, 8(1): 158-164
- [3] Rice KJ, Ballas J, Lai E, et al. Diagnosis of fetal limb abnormalities before 15 weeks: cause for concern[J]. J Ultrasound Med, 2011, 30(7):1009-1019
- [4] Ryu JK, Cho JY, Choi JS, et al. Prenatal sonographic diagnosis of focal musculoskeletal anomalies[J]. Korean J Radiol, 2003, 4(4): 243-251
- [5] 李胜利, 欧阳淑媛, 陈琮璞, 等. 连续顺序追踪超声法检测胎儿肢体畸形[J]. 中华妇产科杂志, 2003, 38(5): 267-269
Li Sheng-li, Ouyang Shu-yuan, Chen Zong-ying, et al. Prenatal ultrasonographic evaluation of fetal limbs anatomy and fetal limbs malformations using a systematic continuous sequence approach[J]. Chinese J Obstet Gynecol, 2003, 38(5): 267-269
- [6] 徐恒, 王彦, 陈艳珊, 等. 连续顺序追踪超声法诊断胎儿手足畸形的临床应用[J]. 中华医学超声杂志(电子版), 2011, 8(8): 124-134
Xu Heng, Wang Yan, Chen Yan-shan, et al. Clinical application of ultrasound diagnosis on fetal hand-foot deformity with a systematic continuous sequence approach[J]. Chin J Med Ultrasound (Electronic Edition), 2011, 8(1): 124-134
- [7] 漆玖玲, 崔爱平, 孙红, 等. 产前超声检查胎儿手足畸形最佳孕周的探讨[J]. 上海医学影像, 2010, 19(3): 186-187
Qi Jiu-ling, Cui Ai-ping, Sun Hong, et al. Discussion of suitable gestational age for prenatal ultrasound to detect fetal hand-foot malformation[J]. Shanghai Medical Imaging, 2010, 19(3): 186-187
- [8] Saeed F, Paramasivam G, Wiechec M, et al. Fetal transverse limb defects: case series and literature review[J]. J Clin Ultrasound, 2011, 39(8):454-457
- [9] Muscatello A, Mastrocola N, Di Nicola M, et al. Correlation between 3D ultrasound appearance and postnatal findings in bilateral malformations of the fetal hands[J]. Fetal Diagn Ther, 2012, 31(2): 138-140
- [10] Chen CP, Shih JC, Huang MC, et al. Prenatal ultrasound demonstration of scoliosis, absence of one rib, a radial club hand, congenital heart defects and absent stomach in a fetus with VACTERL association[J]. Taiwan J Obstet Gynecol, 2012, 51(1): 139-142
- [11] Viora E, Zamboni C, Mortara G, et al. Trisomy 18: Fetal ultrasound findings at different gestational ages[J]. Am J Med Genet A, 2007, 143(6): 553-557
- [12] George M, Evangelos PK, Evangelos PV, et al. Upper limb abnormalities as an isolated ultrasonographic finding in early detection of trisomy 18[J]. Fetal Diagn Ther, 2003, 18(6): 401-403
- [13] 那丽娟, 袁冰, 李开林, 等. 连续顺序追踪超声法在胎儿肢体畸形诊断中的应用及漏诊分析 [J]. 中华医学超声杂志 (电子版), 2012, 9(12):1067-1074
Na li-juan, Yuan bing, Li kai-lin, et al. The clinical application of prenatal ultrasonography using a systematic continuous sequence approach in the diagnosis of fetal limb deformity, and the analysis of missed diagnosis [J]. Chin J Med Ultrasound (Electronic Edition), 2012, 9(12): 1067-1074
- [14] Lochmiller C, Johnston D, Scott A, et al. Genetic epidemiology study of idiopathic talipes equinovarus[J]. Am J Med Genet, 1998, 79(2): 90-96
- [15] Offerdal K, Jebens N, Blaas HG, et al. Prenatal ultrasound detection of talipes equinovarus in a non-selected population of 49314 deliveries in Norway[J]. Ultrasound Obstet Gynecol, 2007, 30(6): 838-844
- [16] Bar-On E, Mashiach R, Inbar O, et al. Prenatal ultrasound diagnosis of club foot: outcome and recommendations for counseling and follow-up[J]. J Bone Joint Surg Br, 2005, 87(7): 990-993
- [17] Woodrow N, Tran T, Umstad M, et al. Mid-trimester ultrasound diagnosis of isolated talipes equinovarus: accuracy and outcome for infants[J]. Aust N Z J Obstet Gynaecol, 1998, 38(3): 301-305
- [18] Lauson S, Alvarez C, Patel MS, et al. Outcome of prenatally diagnosed isolated clubfoot[J]. Ultrasound Obstet Gynecol, 2010, 35(6):708-714
- [19] Jakobovits A. Fetal bone and joint disorders[J]. Orv Hetil, 2008, 149(51): 2425-2431
- [20] Suzuki S, Yamamuro T. The mechanical cause of congenital dislocation of the hip joint. Dynamic ultrasound study of 5 cases[J]. Acta Orthop Scand, 1993, 64(3): 303-304

(上接第 1123 页)

- [15] 杨慧霞. 妊娠合并糖尿病的诊断 [J]. 中国实用妇产与产科杂志, 2004, 16 (11): 648-650
Yang Hui-xia. Gestational diabetes diagnosis [J]. Chinese Practical Obstetrics and Gynecology and obstetrics, 2004, 16 (11): 648-650
- [16] 路卫萍. 妊娠期糖尿病对孕产妇和新生儿结局的影响 [J]. 山东医药, 2010, 50(43): 38-69
Lu Wei-ping. Effect of GDM on maternal and neonatal outcomes [J]. Shandong medicine, 2010, 50 (43): 38-69
- [17] Hillier TA, Vesco KK, Pedula KL, et al. Screening for gestational diabetes mellitus: a systematic review for the U.S. preventive services task force [J]. Ann Intern Med, 2008, 148(10): 766
- [18] 屈莉, 潘海英. 妊娠期糖尿病血糖控制对妊娠结局的影响[J]. 现代临床医学, 2010, 36 (2): 114-115
Qu Li, Pan Hai-ying. The gestational diabetes glucose control on pregnancy outcome [J]. modern clinical medicine, 2010, 36 (2): 114-115