

# 妊娠高血压视网膜病变的影响因素分析及对母婴妊娠结局的影响

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## Analysis of influencing factors for pregnancy induced hypertension retinopathy and its influence on pregnancy outcome of mothers and infants

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### Abstract

• AIM: To investigate the risk factors for pregnancy induced hypertension retinopathy, and analyze its influence on maternal and child pregnancy outcomes.

• METHODS: A total of 100 patients with gestational hypertension who met the requirements of screening were selected, they were divided into two groups, without retinal lesion group ( $n = 29$ ) and retinopathy group ( $n = 71$ ). The age, course of disease, gestational age, blood pressure, proteinuria and hematocrit in two groups were investigated. The risk factors were detected by single factor analysis, and then the study on independent risk factors were analyzed by Logistic regression analysis. At the same time, their influence on maternal and child pregnancy outcomes were investigated.

• RESULTS: The single factor analysis showed that except for age, the differences in the course of disease, gestational age, blood pressure, proteinuria and hematocrit were statistically significant ( $P < 0.01$ ). Logistic regression analysis showed that the course of disease, blood pressure, proteinuria and hematocrit were the risk factors of retinopathy, gestational age was a protective factor. Compared with the group without retinopathy, the incidence of preterm birth, placental abruption, postpartum hemorrhage, perinatal death in

the patients with retinopathy significantly increased, and the difference were statistically significant ( $P < 0.01$ ), and there was a certain correlation between the extent of increase and the grade of retinopathy.

• CONCLUSION: Course of disease, blood pressure, proteinuria and hematocrit of patients with the hypertension of pregnancy are the risk factors of retinopathy, retinopathy has a serious adverse effect on maternal and child pregnancy outcomes.

• KEYWORDS: pregnancy induced hypertension; retinopathy; influencing factors; maternal and child pregnancy outcome

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### 摘要

目的:探讨妊娠高血压视网膜病变发生的危险因素,分析其对母婴妊娠结局的影响。

方法:选取符合研究筛选要求的妊娠高血压患者100例作为研究对象,分为无视网膜病变组(29例)和视网膜病变组(71例),对两组患者年龄、病程、孕周、血压、蛋白尿和红细胞压积等变量进行单因素分析,通过Logistic回归分析探讨独立危险因素,同时分析妊娠高血压视网膜病变母婴妊娠结局的影响。

结果:单因素分析结果表明,除年龄外,患者病程、孕周、血压、蛋白尿和红细胞压积等比较,差异均具有统计学意义( $P < 0.01$ );Logistic回归分析结果表明,病程、血压、蛋白尿和红细胞压积均是视网膜病变发生的危险因素,孕周是保护因素;与无视网膜病变组相比,视网膜病变组患者发生早产、胎盘早剥、产后出血、围生儿死亡风险显著升高,差异有统计学意义( $P < 0.01$ ),其增加幅度与视网膜病变等级存在一定相关性。

结论:妊娠高血压患者病程、血压、蛋白尿及红细胞压积是视网膜病变发生的危险因素,视网膜病变发生会对母婴妊娠结局产生严重不良影响。

关键词:妊娠高血压;视网膜病变;影响因素;母婴妊娠结局

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### 0 引言

妊娠高血压属于妊娠期孕妇所特有的疾病,属于产科临床较为常见疾病之一,该病多发于妊娠20wk后,临床表现以高血压、蛋白尿以及视网膜病变为主,同时可伴有多器官损伤,严重时可引发脑出血、心力衰竭及胎盘早

表1 妊娠高血压视网膜病变的单因素分析

| 影响因素       | 类别       | 无视网膜病变组(n=29) | 视网膜病变组(n=71) | $\chi^2/Z$ | P     |
|------------|----------|---------------|--------------|------------|-------|
| 年龄(岁)      | ≤30      | 23            | 57           | 0.024      | 0.877 |
|            | >30      | 6             | 14           |            |       |
| 病程(wk)     | ≤3       | 22            | 18           | 41.499     | <0.01 |
|            | >3       | 7             | 53           |            |       |
| 孕周(wk)     | ≤28      | 8             | 49           | 28.386     | <0.01 |
|            | >28      | 21            | 22           |            |       |
| 血压(mmHg)   | <160/110 | 26            | 48           | 20.275     | <0.01 |
|            | ≥160/110 | 3             | 23           |            |       |
|            | -        | 25            | 9            |            |       |
| 蛋白尿        | +        | 3             | 14           | -6.597     | <0.01 |
|            | ++       | 1             | 21           |            |       |
|            | +++      | 0             | 27           |            |       |
| 红细胞压积(L/L) | ≤0.35    | 22            | 11           | 68.609     | <0.01 |
|            | >0.35    | 7             | 60           |            |       |

表2 妊娠高血压视网膜病变影响因素 Logistic 回归分析

| 影响因素  | B      | SE(β) | Wald   | OR(95% CI)           | P     |
|-------|--------|-------|--------|----------------------|-------|
| 病程    | 2.225  | 0.513 | 18.844 | 9.254(3.389,25.272)  | <0.01 |
| 孕周    | -1.776 | 0.488 | 13.075 | 0.171(0.066,0.445)   | <0.01 |
| 血压    | 1.611  | 0.658 | 6.000  | 5.007(1.380,18.171)  | 0.014 |
| 蛋白尿   | 2.292  | 0.497 | 21.306 | 9.896(3.739,26.191)  | <0.01 |
| 红细胞压积 | 2.842  | 0.544 | 27.289 | 17.143(5.903,49.785) | <0.01 |

剥等不良妊娠结局,严重威胁母婴健康,是孕产妇及围生儿死亡的主要原因之一<sup>[1-2]</sup>。妊娠高血压视网膜病变是妊娠高血压常见并发症之一,近50%~80%妊娠高血压患者均存在视网膜病变,如若不及时给予诊断和治疗,随着疾病的发展,可出现视网膜出血、水肿、棉绒斑或棉絮状斑、视网膜脱离、视盘水肿等症,导致患者视功能严重受损<sup>[3-4]</sup>。本研究旨在分析妊娠高血压视网膜病变发生的危险因素及其对母婴妊娠结局的影响。

## 1 对象和方法

**1.1 对象** 选取2016-08/2017-09我院收治符合本研究筛选标准的妊娠高血压患者100例作为研究对象,包括妊娠期高血压和轻度子痫前期。所有受试者年龄25~39(平均28.82±3.65)岁,孕周为23~41(平均33.58±2.61)wk,初产妇77例。依据其合并视网膜病变情况将100例患者分为妊娠高血压合并视网膜病变患者(设为视网膜病变组,71例)和妊娠高血压无视网膜病变患者(无视网膜病变组,29例),两组对象平均年龄及平均孕周比较差异均无统计学意义(P>0.05),具有可比性。本研究内容及流程均严格参照医院伦理委员会标准获得伦理委员会许可后进行。研究对象筛选标准:(1)均符合中华医学会妇产科学分会制定妊娠期高血压诊断相关标准<sup>[5]</sup>;(2)符合《眼底病诊断与治疗》中相关诊断及分级标准<sup>[6]</sup>;(3)均为单胎;(4)临床资料完整,对研究内容知情同意并签署知情同意书。排除既往存在高血压、重度子痫、糖尿病及肾病者,临床资料不全及不愿加入研究者。

**1.2 方法** 所有受试者入院后均观察并记录患者的病程、孕周、血压、蛋白尿、尿酸、红细胞压积及视网膜病变等信息。于患者入院后由临床经验丰富医师进行眼底镜检查,

瞳孔过小不便检查者,采用5g/L复方托吡卡胺滴眼液滴眼处理。患者取坐位或卧位,记录视网膜血管管径,计算动静脉比例,观察血管反光情况、有无动静脉交叉压迫、有无出血、渗出及视网膜脱离等情况。同时记录视网膜病变对产妇早产、胎盘早剥、产后出血、胎儿窘迫、新生儿窒息、围生儿死亡的影响。视网膜病变分级:I级:视网膜动脉血管变细,粗细不均,动脉血管痉挛(动脉痉挛期);II级:视网膜动脉狭窄,管壁反光增强,存在动静脉交叉压迫现象(动脉硬化期);III级:视网膜存在水肿、出血及渗出现象,严重时可产生渗出性视网膜脱离。

统计学分析:采用统计学软件SPSS17.0。计数资料采用例数(%)表示,组间比较采用卡方检验,Fisher确切概率法,妊娠高血压视网膜病变的危险因素采用单因素分析,对有关因素进行Logistic回归分析,以P<0.05表示差异有统计学意义。

## 2 结果

**2.1 妊娠高血压视网膜病变的单因素分析** 由表1可知,不同年龄段间视网膜病变患者与无视网膜病变患者数值差异无统计学意义(P>0.05)。妊娠高血压病程>3wk、孕周≤28wk、血压≥160/110mmHg、蛋白尿及红细胞压积>0.35L/L时,患者发生视网膜病变的风险显著升高,差异有统计学意义(P<0.01)。

**2.2 Logistic 回归分析** 对表1中具有统计学意义的病程、孕周、血压、蛋白尿及红细胞压积等5个因素作为自变量,在 $\alpha_{entry}=0.05$ 水准上,逐步筛选法进行Logistic回归分析,结果表明病程、血压、蛋白尿及红细胞压积均是妊娠高血压视网膜病变的危险因素,孕周是保护因素(P<0.01),见表2。

表3 妊娠高血压视网膜病变对母婴妊娠结局的影响

例(%)

| 组别       | 例数 | 早产                   | 胎盘早剥                 | 产后出血                 | 胎儿窘迫  | 新生儿窒息 | 围生儿死亡                |
|----------|----|----------------------|----------------------|----------------------|-------|-------|----------------------|
| 无视网膜病变组  | 29 | 1(3)                 | 0                    | 1(3)                 | 2(7)  | 0     | 1(3)                 |
| 视网膜病变组   |    |                      |                      |                      |       |       |                      |
| I级       | 34 | 2(6)                 | 1(3)                 | 2(6)                 | 3(9)  | 1(3)  | 2(6)                 |
| II级      | 20 | 6(30) <sup>a,c</sup> | 3(15) <sup>a</sup>   | 5(25) <sup>a,c</sup> | 2(10) | 1(5)  | 3(15)                |
| III级     | 17 | 8(47) <sup>a,c</sup> | 4(24) <sup>a,c</sup> | 3(18) <sup>a,c</sup> | 2(12) | 1(6)  | 5(29) <sup>a,c</sup> |
| $\chi^2$ |    | 81.468               | 42.827               | 28.837               | 1.522 | 7.081 | 34.274               |
| <i>P</i> |    | <0.01                | <0.01                | <0.01                | 0.699 | 0.063 | <0.01                |

注:进一步两两比较时,*P*值经校正后,*P*<0.008为差异有统计学意义。<sup>a</sup>*P*<0.008 vs 无视网膜病变组;<sup>c</sup>*P*<0.008 vs I级。

**2.3 妊娠高血压视网膜病变对母婴妊娠结局的影响** 患者100例中,17例Ⅲ级妊娠高血压视网膜病变患者待血压平稳后均终止妊娠,方式大部分为剖宫产。由表3可知,与无视网膜病变组相比,存在视网膜病变组患者的早产、胎盘早剥、产后出血、胎儿窘迫、新生儿窒息和围生儿死亡发生率均不同程度的升高,其中组间早产、胎盘早剥、产后出血、围生儿死亡的发生率比较,差异均具有统计学意义(*P*<0.01),而组间胎儿窘迫、新生儿窒息发生率比较,差异均无统计学意义( $\chi^2=1.522, 7.081, P>0.05$ )。随着视网膜病变分级的增加,患者各不良结局发生率不同程度的升高。

### 3 讨论

妊娠高血压是我国孕妇死亡的第二大诱因,妊娠高血压视网膜病变的早期病理改变为全身小动脉痉挛,以视网膜血管功能性收缩为主,随着血压持续升高,小动脉收缩功能加强,引发周围组织缺氧缺血,毛细血管内皮受损,引发视网膜水肿、出血<sup>[7-8]</sup>。妊娠高血压视网膜病变可分为3个分级,在I级、II级时患者给予适当药物治疗下可继续妊娠,而处于Ⅲ级的患者,由于器质性损伤发生,可能会引发视力障碍,眼底出血可能预示着脑出血的发生,此类患者除给予解痉、降压等治疗外,需及时终止妊娠<sup>[9-10]</sup>。妊娠高血压视网膜病变病情严重程度诊断对评估妊娠高血压病情、终止妊娠及治疗指导均具有重要价值<sup>[11]</sup>。

相关研究指出,妊娠高血压发生视网膜病变的风险与患者血压水平呈一定的相关性,视网膜病变程度加重,患者尿蛋白及水肿发生愈严重<sup>[12]</sup>。全身小动脉痉挛可导致舒张压升高,大量研究已证实,舒张压是视网膜病变影响最大的危险因素,患者舒张压每升高约20mmHg,视网膜病变风险可增加近3倍<sup>[13-14]</sup>。既往研究指出,妊娠高血压可导致机体代谢异常,在评估患者机体是否存在扩容现象过程中,红细胞压积具有重要指导作用<sup>[15]</sup>。本研究单因素分析结果指出,视网膜病变发生与妊娠高血压病程、产妇孕周、血压、蛋白尿和红细胞压积有关,而回归分析结果表明病程、血压、蛋白尿及红细胞压积均是妊娠高血压视网膜病变的危险因素,孕周是保护因素。本研究结果与高新宇<sup>[16]</sup>报道的部分内容相一致,证实蛋白尿及红细胞压积等是妊娠高血压视网膜病变的危险因素。在本研究中,发生视网膜病变组中高血压水平显著高于无视网膜病变组,揭示视网膜病变组患者存在更高的脑出血风险,证实妊娠期高血压程度与视网膜病变程度呈一定的相关性<sup>[17]</sup>。通过监测患者血压,对血压过高者进行及时药物干预治疗,对减少严重并发症发生、降低死亡率具有重要

意义。此外本研究还对妊娠高血压视网膜病变及不同分级对母婴妊娠结局的影响进行了分析,结果表明,伴有视网膜病变组产妇早产、胎盘早剥、产后出血、胎儿窘迫及围产儿死亡等发生率均高于无视网膜病变组,且Ⅲ级病变组早产、胎盘早剥、产后大出血及围产儿死亡发生风险显著升高。结果指出,妊娠高血压视网膜病变对母婴妊娠结局产生了不良影响,其原因可能为妊娠高血压视网膜病变病情发展,小动脉痉挛加重了周围组织缺氧缺血现象,而Ⅲ级病变患者体内发生器质性受损,进一步加重了对母婴的不良影响。因此,及早有效干预患者视网膜病变病情的发展,对母婴妊娠结局具有重要意义。

综上所述,妊娠高血压患者病程、血压、尿蛋白和红细胞压积等均是妊娠高血压视网膜病变的危险因素,孕周是保护因素,视网膜病变的发生可促进产妇早产、胎盘早剥、产后出血、胎儿窘迫及围产儿死亡等不良妊娠结局的发生,及早诊断及治疗对预防并发症发生及降低患者死亡率具有重要价值。

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