

血压对急性心肌梗死的预后影响

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【摘要】急性心肌梗死(AMI)是冠状动脉粥样硬化性心脏病中病情最危重的一种类型,具有较高的复发率及死亡率,严重威胁着人们的身体健康。其发病人群以老年人为主,但近年来 AMI 的发病人群具有年轻化的趋势。为此,探讨 AMI 的预后影响因素至关重要。众所周知,血压对于 AMI 患者预后的影响是巨大的,但是目前 AMI 患者的血压控制目标仍存在争议,现主要从 AMI 患者的收缩压及舒张压控制目标以及脉压、血压变异性、四肢血压对 AMI 的预后影响做一阐述。

【关键词】急性心肌梗死;血压;预后

【DOI】10.16806/j.cnki.issn.1004-3934.2021.06.002

Influence of Blood Pressure on Prognosis of Acute Myocardial Infarction

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【Abstract】 Acute myocardial infarction(AMI) is the most critical type of coronary atherosclerotic heart disease. It has a high recurrence and mortality rate, which seriously threatens people's health. Most of the patients are the elderly, but in recent years, the incidence of AMI is getting higher and higher and the incidence population has a younger trend. Therefore, it is very important to explore the prognostic factors of AMI. It is well known that blood pressure has a great influence on the prognosis of patients with AMI, but at present, the goal of blood pressure control in patients with AMI is still controversial. This article mainly expounds the control objectives of systolic and diastolic blood pressure in patients with AMI and the effects of pulse pressure, blood pressure variability and limb blood pressure on the prognosis of AMI.

【Key words】 Acute myocardial infarction; Blood pressure; Prognosis

急性心肌梗死(acute myocardial infarction, AMI)是冠状动脉急性、持续性缺血缺氧所引起的心肌细胞的坏死。尽管近年来 AMI 的存活率由于及时的诊断、直接经皮冠状动脉介入治疗(primary percutaneous coronary intervention, PPCI)和二级预防策略而得到改善,但 AMI 患者不良事件的发生率仍较高^[1]。据一项几年前的研究显示,在全球,AMI 的发病率及复发率也比较高^[2]。在美国,AMI 每年将近有 550 000 例患者首次发作和 200 000 次复发发作^[3];在中国,AMI 是人口死亡的主要原因,约占中国死亡人口的 40%^[4]。虽然,美国等发达国家 AMI 的发病率及复发率也比较高,但是全世界 80%以上的心血管死亡病例却发生在低收入及中等收入的国家,原因可能为高等收入国家有更好的防御以及血运重建技术^[5]。血压是心血管疾病的重要影响因素之一,为此,了解血压对 AMI 预

后的影响对于减少 AMI 的发生及复发至关重要。

1 收缩压及舒张压对 AMI 预后的影响

高血压是 AMI 不良预后的重要影响因素之一,Reinstadler 等^[6]在一项 792 例急性 ST 段抬高心肌梗死(ST segment elevation myocardial infarction, STEMI)患者的临床试验中发现,有 12 个月高血压病史的患者主要心血管不良事件的风险要比无高血压病史的患者增加 3 倍。然而 AMI 患者血压控制的合理水平一直无定论,2016 年一项 CLARIFY 国际队列研究观察了 22 672 例冠状动脉粥样硬化性心脏病(冠心病)患者的数据结果显示,收缩压控制在 120~140 mm Hg (1 mm Hg=0.133 3 kPa)心血管事件发生率最低,但是收缩压<120 mm Hg 时与心血管死亡和全因死亡的风险增加有关,且在平均随访 5 年后发现收缩压≥140 mm Hg 或收缩压<120 mm Hg,舒张压≥80 mm Hg

或舒张压 <70 mm Hg 均与心血管事件风险增加有关,且呈 J 曲线关系^[7]。另外,Bohm 等^[8]对 30 937 例高危冠心病患者的分析也表明,当收缩压 <120 mm Hg 时,不良事件显著增加。一项随机对照试验和一项观察性研究的事后分析表明,在患有冠心病的高血压患者中,舒张压 <70 mm Hg 的患者再发心血管事件的风险增加^[9]。然而对于未发生心血管事件的人来说,血压控制在一定的水平会降低心血管事件发生的风险。*JAMA* 杂志上最近发表的一项关于收缩压为 90 ~ 129 mm Hg 时收缩压水平与心血管事件风险的关系,结果显示,对于无动脉粥样硬化性心血管疾病和其他危险因素的人群,收缩压从 90 mm Hg 开始随着血压水平的升高,心血管风险逐渐升高^[10]。HOT 试验研究了 18 790 例舒张压为 100 ~ 115 mm Hg 的高血压患者,根据舒张压控制在 <90 mm Hg、 <85 mm Hg 以及 <80 mm Hg 进行分组,发现舒张压 <80 mm Hg 与舒张压 >85 mm Hg 相比,心肌梗死发生率增加了 22%^[11]。2019 年发表在《新英格兰杂志》上的一项研究了门诊 130 万例成年人的血压数据,确定了 8 年间收缩期及舒张期高血压对心肌梗死、缺血性卒中或出血性卒中综合结果的影响表明,收缩压 ≥ 140 mm Hg 及舒张压 ≥ 90 mm Hg 与综合结果独立相关^[12]。综上,心血管事件发生前的收缩压 ≥ 140 mm Hg,舒张压 ≥ 90 mm Hg 时发生心血管事件的风险将会增加;而在已经发生心血管事件后收缩压水平控制在 120 ~ 140 mm Hg,舒张压控制在 70 ~ 80 mm Hg 的患者预后较好。

2 脉压对 AMI 预后的影响

脉压是收缩压和舒张压的差值,它可间接反映主动脉僵硬的程度^[13]。脉压在 50 ~ 60 岁之间开始逐渐升高,此后随着血管老化程度的增加,舒张压下降速度的加快,脉压值也开始加速升高^[14]。在过去的 20 年里,有许多项观察性研究和对照试验表明脉压可作为心血管疾病的重要危险因素和早期血管老化的指标^[14]。另外,在一项超过 45 000 例患者的大型国际研究中也发现,较高的脉压会增加非致死性心肌梗死、心血管住院及心血管死亡的风险,且观察到不良反应在脉压 >70 mm Hg 时最为显著^[15]。有研究指出,脉压每增加 10 mm Hg,患冠状动脉疾病的风险增加 23%,老年人患冠心病风险将增加 12%,而且它是比平均动脉压和单纯收缩压更强的 AMI 预测因子^[16]。另外也有研究显示高收缩压和低舒张压组合组的患者会放大因收缩期高血压带来的后负荷和心肌能量需求增加以及舒张期低血压冠状动脉灌注减少的有害影响^[17]。Harbaoui 等^[18]的研究也证明,在心肌梗死的情况下,

入院时测量的脉压是心肌梗死死亡和复发的有力预测因子,具体表现为当脉压 >70 mm Hg 时,心肌梗死复发的风险将增加($HR=1.206, P<0.001$)。脉压值增高多常见于老年患者,而此类患者往往合并糖尿病、高血压和动脉粥样硬化等多种疾病,糖尿病、高血压和动脉粥样硬化会改变血管壁细胞基质降低血管壁弹性,会加剧脉压值增高,增加 AMI 发生及复发的风险。在一项平均年龄为 (68 ± 10) 岁,平均血压为 (138 ± 19) mm Hg,平均脉压为 (49 ± 16) mm Hg 的队列研究中发现,脉压增高与心肌梗死、心血管死亡结果相关($P<0.05$);在调整了性别、年龄、当前吸烟状况、高胆固醇血症史、糖尿病史、阿司匹林使用、他汀类药物使用、血压药物使用和平均动脉压后,高脉压仍与上述较差的心血管结果相关^[18]。曾有人因外周脉压不是左心室压力和冠状动脉灌注最准确的反映而对脉压和不良心血管结果之间的关系产生质疑^[19],但就目前的研究发现,脉压可独立预测心血管疾病,且脉压在临床上较易获得,可帮助高危 AMI 患者进行风险分层^[15,20]。

3 血压变异性对 AMI 预后的影响

血压变异性(blood pressure variability, BPV)是指一定时间内血压波动的程度。BPV 根据变化时间的不同可分为:每搏间血压变异、昼夜 BPV(血压昼夜节律)、日常 BPV 和访视间变异性(visit-to-visit variability of blood pressure, VVV)^[21]。BPV 对 AMI 患者的预后也有较大的影响。最近一项荟萃分析显示,长期收缩期 BPV 增加与全因、心血管死亡和心血管事件的风险较高有关^[22]。一项纳入了 2 865 157 例患有和不患有高血压的美国退伍军人的大型队列研究也证实了以上研究结果,该结果同样表明,收缩期 BPV 越高,全因死亡率、冠心病、卒中和终末期肾病的风险越高^[23]。在另一项研究中发现,将 200 例急性冠脉综合征住院患者根据 BPV 分为低 BPV 组和高 BPV 组,经过多变量二元 logistic 回归分析显示 BPV 是住院期间主要心血管事件的独立预测因子^[24]。一项动态血压国际研究也显示,收缩 BPV 增加 10 mm Hg,心血管事件风险增加 1.48 倍;舒张 BPV 增加 10 mm Hg,心血管死亡风险将增加 3.34 倍^[25]。另外, VVV 较大的患者与 VVV 较小的患者相比,经过 5.7 年的随访发现, VVV 较大组患者的冠心病、卒中、心力衰竭住院和全因死亡风险高于 VVV 较小组的患者^[26]。一项中国的 FEVER 研究结果也显示随访期间的收缩压及舒张压变异性对心血管事件有一定的影响^[27]。综上,对于有 AMI 患者的随访不仅要关注患者血压水平的高低,也要关注患者 BPV, AMI 患者血压平稳可降低 AMI 的复发率并改善其预后。

4 四肢血压对 AMI 预后的影响

测量四肢血压衍生出来的参数包括四肢的收缩压及舒张压、四肢间血压差及踝臂指数 (ankle brachial index, ABI)。四肢血压差又包括:臂间收缩压差、臂间舒张压差、踝间收缩压差及踝间舒张压差。有研究显示,臂间收缩压差 ≥ 10 mm Hg 时与外周血管疾病、冠心病、心血管死亡率和总死亡率显著相关^[28];具体来说,当臂间收缩压相差 ≥ 15 mm Hg 时心血管死亡率会增加 68%^[29]。另有研究显示,臂间舒张压差比臂间收缩压差更能预测 AMI 患者的总死亡率^[30],原因可能为舒张压是冠状动脉灌注压的主要决定因素之一^[31]。有研究经过 4 年的随访发现,在中国老年人群中不仅臂间收缩压差和舒张压差增大与心血管疾病预后有关,而且踝间收缩压差和舒张压差值增大也与心血管和总死亡率相关^[32]。在血液透析患者和中国老年人群中,踝间收缩压差值 ≥ 15 mm Hg 也被证明与不良心血管事件增加和总死亡率增加有关^[33]。同样的,踝间的舒张压差值对心血管死亡率的预测价值要高于踝间的收缩压差值^[30]。ABI 是通过踝部收缩压与手臂收缩压的比率来计算的,它是诊断外周动脉疾病的一种简单、无创的方法。它的正常范围为 0.9~1.4,当 ABI<0.9 时提示有外周动脉闭塞性疾病^[34]。研究发现,有外周动脉疾病的 AMI 患者年龄更大,基础疾病更多,不良心血管事件的发生率也更高^[35],故较低的 ABI 能够预测心血管疾病的发生率和总死亡率^[36]。另外,在一个大型的国家筛查数据库中,ABI 水平与心肌梗死病史之间存在强烈而一致的关系^[37]。综上,臂间收缩压及舒张压差、踝间收缩压及舒张压差以及 ABI 值是 AMI 预后的很好预测指标,未来需要多加关注。

5 小结

AMI 具有较高的住院率及死亡率,严重威胁着人们的健康及生活质量。研究 AMI 的预后影响因素,严格控制不良的影响因素对于改善 AMI 患者的预后至关重要。从上述内容可得知,收缩压及舒张压维持在合适水平,保持血压的杓形节律,臂间收缩压差<10 mm Hg 及 ABI 控制在 0.9~1.4,脉压保持在 40 mm Hg 左右对于 AMI 患者的预后较好。

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收稿日期:2020-09-15

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收稿日期:2020-10-04