

心源性猝死的流行病学研究进展

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【关键词】 心脏性猝死; 流行病学

Sudden cardiac death: progress in epidemiological research

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心源性猝死(SCD)是一个多病因、多危险因素疾病,是65岁以下成年人最常见死因,对患者及家庭影响深远,成为重大公共健康问题^[1]。SCD也为院外心血管病死因之首,所占比例为60%^[2]。近年来随着医疗环境的改善,SCD预防和急救设备如埋藏式复律除颤器(implantable cardioverter defibrillators, ICD)和自动体外除颤器(automated external defibrillators, AED)等的使用,使SCD的预防和管理取得显著进展。然而,SCD仍是一个不可忽视的公共健康问题。一方面由于糖尿病、高血压和冠心病等疾病发病率和患病率迅速增长,使得人群中心脏病或潜在心脏病患者的比例扩大,SCD的发病风险大幅上升;另一方面由于发生SCD的患者大多为之前未被诊断过心脏疾病,也未达到高风险标准的“健康人”^[3]。为此笔者回顾近年来SCD研究进展,重点探讨其流行现状、危险因素和预防措施。

1. SCD流行现状:

(1)定义:目前广为接受的SCD定义是指突发性的非预料死亡,表现为症状出现短期内发生的突发意识丧失及循环、呼吸骤停。“短期”所规定时限为,有目击者时<1 h,无目击者时为24 h^[4],死因多为心律失常,包括由心肌梗死造成的猝死,但不含如卒中、肺栓塞、大动脉破裂和药物或酒精中毒等原因导致的猝死^[4]。

(2)发病率:各国对SCD的研究广受重视。据估计,在美国SCD每年可造成18万至40万的死亡^[5-6],占冠心病死亡的一半^[7],但各研究机构往往采取不同的数据源、SCD定义、病例估算以及确诊方法,导致研究结果波动较大^[6],如基于死亡证明书的研究对SCD资料收集很敏感,但是此法特异度不够,有可能高估真实的发病率,而严格限定死亡时间在1 h内其标准又可导致病例数损失^[2]。在日本Tokashiki等^[8]开展的一项对冲绳南部居民SCD回顾性研究中,除将发生时间<1 h

的事件纳入外,还包含急性发作至死亡间隔2 d的病例,最终得到该地区的年发病粗率为37/10万。原因是考虑到死亡证明书上记录的时间可能有偏倚,急性发作至死亡所经历的真实时间可能<24 h;此外,Tokashiki等^[8]还将医院记录、法院医疗记录以及警察局记录等一并考虑在内,这样多渠道收集信息,以确保无遗漏SCD病例。中国医学科学院阜外心血管病医院Hua等^[9]在国内建立了3级疾病上报和确诊体系进行SCD调查,结果显示我国SCD发病率(40/10万至50/10万)虽低于美国等西方国家(40/10万至90/10万),但由于人口基数大,SCD致死人数也多。

(3)年龄分布:成年人中SCD发病风险随年龄增加而增多,并在一定程度上反映CHD的发病率^[5]。<35岁人群发病率较低,在英国伦敦地区和意大利Veneto地区分别为平均4.5/10万^[10]和1.4/10万^[11]。我国一项研究显示,中老年男性SCD发病率显著增加,且大多数病例发生在≥65岁人群^[9]。80岁老年男性SCD年发病率约为40岁男性的7倍;女性SCD随年龄的分布则显得更为极端:>70岁女性的发病率是<45岁女性发病率的40倍以上^[12]。

(4)性别分布:国外研究显示,男性SCD的发病率是女性的2~3倍^[13];我国Hua等^[9]研究显示,农村地区男性发病率是城市男性的2倍,约为女性的3倍。我国男女性总体发病率分别为44.6/10万和39.0/10万,差异无统计学意义。青年人群中SCD即以男性为主,性别比为1.5~3.6:1^[14];中年男性SCD发病风险为同年龄段女性的4倍,但该差异随年龄的增加而减小,其原因可能是女性绝经后CHD的患病率逐渐增加,而CHD则是SCD首要危险因素^[2]。

2. 病因及危险因素:

(1)传统危险因素:SCD病因复杂且难以预测,是约50%的心脏病首发症状^[15]。80%的SCD由冠状动脉性心脏病(CHD)引起^[16]。已证实的SCD传统危险因素包括年龄增加、男性、吸烟、高血压、糖尿病、高脂血症、肥胖和CHD家族史等^[17],但这些因素特异性差。有文献指出左室射血分数(LVEF)可作为缺血性或非缺血性心脏病导致猝死的较强独立预测因子^[18],但仅凭单个危险因素预测有很大的局限^[19]。对此国外有研究提出,综合考虑年龄、心功能等级、心衰病史、不稳定性心律失常、LVEF等因素^[20-21],可达到准确预测目的。

(2)心肌梗死:是SCD一个重要的危险因素。研究显示,急性ST段抬高性心肌梗死与心律失常和心脏停搏有关联,而后两者与心肌梗死后瘢痕性室性心动过速往往导致SCD^[22]。心肌梗死后30 d内SCD发病风险最高,并随着时间推移发病风险逐渐下降^[23]。

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(3)心衰:是诱发SCD另一个重要的危险因素。我国一项大型流行病学调查显示,当前35~74岁人群中超过40万例心衰患者,其中35~44岁人群的发病率为0.4%,>55岁者为1.3%,表明心衰发病率风险随年龄增加而增加^[24]。心衰将导致SCD发病风险增加5倍,死于心衰的患者中,约30%~50%是由于SCD^[25]。在心衰症状轻微的患者中,有66%发生SCD,而症状严重者中,只有33%发生SCD^[26],说明心衰症状的轻重不足以成为SCD判断的条件,其具体判别机制仍需探讨。

(4)异常心电图:一般人群QT间期延长可与SCD相关^[27]。校正QT间期长度>440 ms者,其SCD发病风险是小于该长度者的2.3倍,且该因素独立于年龄、性别、心率和药物使用^[28]。此外,运动心电图记录的异常心律、延迟电位、T波交替以及缺血性J波均提示与SCD有关联^[29]。

3. 预防和治疗:SCD由于缺乏特异性的判别因素,因此将个体的有效措施用于人群防治可能收效甚微^[30],但由于SCD与心脏病尤其是CHD相关,因此降低一般心脏病危险因素的措施,亦可降低人群SCD的发病率。主要包括健康体检、健康咨询、纠正危险生活方式等,对有家族史、心肌梗死及心律失常的高危个体给以特别关注,做好三级预防。

(1)心脏磁共振成像(cardiac magnetic resonance imaging, CMR):是一种新型无辐射且效果优良的检测方法,对防治SCD有重要意义。CMR可准确评估心左室和右室功能,提供梗死面积及其组织特征等有价值信息^[31]。不断有证据显示,CMR测量梗死面积在两方面优于LVEF,其中识别电生理诱发实验(EPS)可诱导室速患者^[32],此外还可预测死亡或适用ICD疗法的患者^[33]。但CMR应用前景仍需进一步证实其分类和检测作用^[34]。

(2)ICD置入:该方法可显著降低SCD幸存者及器质性心脏病患者的猝死风险,是目前高危患者预防和治疗SCD的主要手段^[35]。ICD是通过在心脏内给以较低的能量,短时间内终止室速、室颤,达到预防猝死的目的,但由于目前使用ICD的护理费用昂贵,在一定程度上限制了其使用^[36]。

(3)使用AED:个体在发生SCD后保障存活最重要的条件是及时除颤。在无心肺复苏(CPR)和进行CPR下SCD患者的生还率分别为每分钟减少7%~10%和3%~4%^[37];如10 min内未进行除颤,95%的患者会死亡。我国的急救反应时间平均为16.5 min,有些地区甚至>30 min,与西方国家差距较大。有研究显示,AED的操作简便易学^[38]。如在公共场所放置AED,当发生SCD可及时得到CPR和除颤,患者存活概率将大大提高。

(4)药物预防和治疗:目前药物可作为ICD的辅助治疗,其中有效抑制交感神经兴奋的 β 受体阻滞剂成为预防室速和室颤的一线药物^[18]。研究显示,在长QT综合征患者中使用 β 受体阻滞剂,可60%减少各类心脏事件发生风险^[39]。

(5)其他方法:心室同步化起搏-电复律除颤器(cardiac resynchronization therapy with a defibrillator, CRT-D)是近年来心衰和SCD治疗的重大进展之一,适用于LVEF \leq 0.35、心

衰和心电图显示QRS期延长性心律失常患者^[40]。研究证实,与ICD相比,CRT-D可显著减少死亡率与再住院率,但可增加设备相关感染率^[41]。另外随着自主神经活动与SCD的关系逐渐被阐明,肾动脉神经消融(renal artery denervation, RDN)预防SCD、治疗室性心动过速(ventricular tachycardia, VT)的价值也在凸显,国外已有RDN方法成功治疗VT的案例^[42],但其进一步应用仍需探索。

4. 展望:目前在SCD的发病机制、危险因素、预防治疗及患者管理上,国内外均取得显著成果,但SCD仍是一个世界性的重大健康问题。当前对SCD定义还有争议,各地区研究者资料收集方法也不尽相同,对各地区实际发病情况的了解带来一定困难。SCD的危险因素也缺乏特异性指标,需要探索出更多的多变量协同模式以进行预测控制及识别高危人群。预防和治疗SCD还需要全社会共同努力并配备和培训使用AED。总之,控制SCD,减少其对社会的危害,还有很长一段路要走。

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