

潘艳,郭盛兰,吴棘,覃诗耘,戴红,董欣.实时三维超声心动图定量评价原发性高血压患者右心室舒张功能[J].中国医学影像技术,2013,29(8):1309-1312

## 实时三维超声心动图定量评价原发性高血压患者右心室舒张功能

### Real-time three-dimensional echocardiography in quantitative assessment of the right ventricular diastolic function in patients with primary hypertension

投稿时间: 2013-02-07 最后修改时间: 2013-05-24

DOI:

中文关键词: 高血压 心室舒张功能,右 超声心动描记术,三维

英文关键词: Hypertension Ventricular function, right Echocardiography, three-dimensional

基金项目: 广西自然科学基金(2010GXNSFA013138);广西卫生厅重点科研课题项目(卫生厅重200624)。

作者	单位	E-mail
<a href="#">潘艳</a>	<a href="#">广西医科大学第一附属医院超声科, 广西 南宁 530021</a>	
<a href="#">郭盛兰</a>	<a href="#">广西医科大学第一附属医院超声科, 广西 南宁 530021</a>	<a href="mailto:gxnyndcs@126.com">gxnyndcs@126.com</a>
<a href="#">吴棘</a>	<a href="#">广西医科大学第一附属医院超声科, 广西 南宁 530021</a>	
<a href="#">覃诗耘</a>	<a href="#">广西医科大学第一附属医院超声科, 广西 南宁 530021</a>	
<a href="#">戴红</a>	<a href="#">广西医科大学第一附属医院超声科, 广西 南宁 530021</a>	
<a href="#">董欣</a>	<a href="#">广西医科大学第一附属医院超声科, 广西 南宁 530021</a>	

摘要点击次数: 312

全文下载次数: 157

中文摘要:

目的 探讨实时三维超声心动图(RT-3DE)定量评价原发性高血压(PH)患者右心室舒张功能的价值。方法 收集51例PH患者和51名健康志愿者(对照组)根据左心室质量指数将PH患者分为非左心室肥厚(NLVH)组和左心室肥厚(LVH)组。采用多普勒超声测量三尖瓣口舒张早期峰值血流速度(E)、舒张晚期峰值血流速度(A)、三尖瓣前瓣环处舒张早期心肌运动速度(Ea)、舒张晚期心肌运动速度(Aa),计算E/A、Ea/Aa和E/Ea;应用RT-3DE时间-容积曲线,计算右心室舒张期充盈1/4、1/3、1/2、3/4容积的时间比率( $D_{1/4}$ 、 $D_{1/3}$ 、 $D_{1/2}$ 、 $D_{3/4}$ ),计算1/3充盈分数(1/3 FF)、峰值充盈率(PFR)。比较组间上述参数差异,分析PH患者上述参数间的相关性。结果 NLVH组16例、LVH组35例,其E/A、Ea/Aa均小于对照组( $P < 0.05$ );NLVH组Ea、E/Ea与对照组比较差异均无统计学意义( $P > 0.05$ ),而LVH组Ea小于对照组、E/Ea大于对照组( $P < 0.05$ );NLVH和LVH组 $D_{1/4}$ 、 $D_{1/3}$ 、 $D_{1/2}$ 和 $D_{3/4}$ 均高于对照组( $P < 0.05$ ),PFR和1/3 FF均低于对照组( $P < 0.05$ );NLVH和LVH组上述参数差异均无统计学意义( $P > 0.05$ )。PH患者 $D_{1/4}$ 、 $D_{1/3}$ 、 $D_{1/2}$ 和 $D_{3/4}$ 与E/Ea呈正相关,PFR、1/3 FF与E/Ea呈负相关( $P < 0.05$ )。结论 应用RT-3DE能直接获得右心室容积随时间变化的相关参数,对评价PH患者右心室舒张功能有重要指导意义。

英文摘要:

**Objective** To explore the clinical value of real-time three-dimensional echocardiography (RT-3DE) in quantitative assessment of the right ventricular diastolic function in patients with primary hypertension (PH). **Methods** Fifty-one hypertensive patients and 51 healthy volunteers (control group) were enrolled. The PH patients were divided into non-left ventricular hypertrophy (NLVH) group and left ventricular hypertrophy (LVH) group according to the left ventricle mass index. Doppler parameters of tricuspid valves, including peak early diastolic velocity (E), peak late diastolic velocity (A), early diastolic velocity (Ea) and late diastolic velocity (Aa) were measured, and E/A, Ea/Aa and E/Ea were calculated. The volume-time curve was obtained with RT-3DE. The time ratios of right ventricular filling to 1/4, 1/3, 1/2, 3/4 capacity ( $D_{1/4}$ ,  $D_{1/3}$ ,  $D_{1/2}$  and  $D_{3/4}$ ) were calculated. In addition, 1/3 filling fraction (1/3 FF) and peak-filling rate (PFR) were calculated. All the above parameters were compared among the three groups, and the correlations of them in PH patients were analyzed. **Results** There were 16 patients in NLVH group and 35 patients in LVH group. E/A, Ea/Aa in NLVH and LVH group were both lower than those in control group (all  $P < 0.05$ ). There was no difference of Ea nor E/Ea in NLVH group compared with control group (all  $P > 0.05$ ), while Ea was lower and E/Ea was higher in LVH group than those in control group (both  $P < 0.05$ ). RT-3DE showed that  $D_{1/4}$ ,  $D_{1/3}$ ,  $D_{1/2}$  and  $D_{3/4}$  increased, while PFR and 1/3 FF decreased in both NLVH and LVH group compared with control group (all  $P < 0.05$ ). There was no statistical difference of all the above parameters between NLVH group and LVH group (all  $P > 0.05$ ).  $D_{1/4}$ ,  $D_{1/3}$ ,  $D_{1/2}$  and  $D_{3/4}$  had positive correlation with E/Ea (all  $P < 0.05$ ), PFR and 1/3 FF had negative correlation with E/Ea (both  $P < 0.05$ ). **Conclusion** RT-3DE provides insight into parameters of right ventricular filling over time. It is of great significance for quantitative evaluating right ventricular diastolic function in PH patients.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第6270251位访问者

版权所有：《中国医学影像技术》期刊社

主管单位：中国科学院 主办单位：中国科学院声学研究所

地址：北京市海淀区北四环西路21号大猷楼502室 邮政编码：100190 电话：010-82547901/2/3 传真：010-82547903

京ICP备12000849号-1

本系统由北京勤云科技发展有限公司设计