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# 二维超声斑点追踪成像评价重型地中海贫血患儿左心室内外膜心肌收缩功能损害

# Evaluation on left ventricular endocardial and epicardial dysfunction with two-dimensional speckle trackin imaging in children with thalassemia major

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中文摘要:

目的 应用二维超声斑点追踪成像(2D-STI)技术评价重型地中海贫血患儿左心室收缩功能早期损害。 方法 对60例地中海贫血患儿及30例正常儿童(对照组)行常规超声心动图检查,根清铁蛋白(SF)水平将患儿分为A、B两组,A组30例SF≥2500 μg/L,B组30例SF<2500 μg/L,获取各组左心室心尖四腔心、两腔心、长轴切面二维图像,测量左心室内外膜心肌纵向收缩期峰值变。 结果 地中海贫血A组、B组与对照组各常规超声心动图参数及左心室心肌质量差异均无统计学意义(*P*均>0.05)。与对照组比较,A组左心室长轴内膜心肌纵向应变明显减低(*P*>0.05仅后壁及下壁内膜心肌应变值明显减低(*P*>0.05),A组所有节段内膜心肌纵向应变均低于B组(*P*均<0.05)。与对照组比较,A组左心室少部分节段的长轴外膜心肌纵向应变明显减低(*P*>0.05)所有节段外膜心肌纵向应变值均无明显变化(*P*均>0.05)。 结论 2D-STI技术能够发现常规超声不能检出的重型地中海贫血患儿早期心肌收缩功能损害;SF水平较高患儿的心肌收缩功能较SF水平较低患儿更为严重。

英文摘要:

**Objective** To evaluate early systolic dysfunction of left ventricular (LV) in children with thalassemia major by two-dimensional speckle tracking imaging (2D-STI). **Methods** General echocardiog was taken in 60 thalassemia major children and 30 normal children (control group). Sixty thalassemia major children were divided into 2 groups according to serum ferritin (SF). Group A included 30 thalassemia major children with SF≥2500 μg/L, while group B included 30 thalassemia major children with SF<2500 μg/L. Two-dimensional images were recorded from the apical four-chamber view, chamber view and long-axis view of LV for all subjects. The longitudinal peak systolic strain (PSS) of endocardium and epicardium were measured in all of these views using special strain software. **R** There was no significant difference among group A, B and control groups about the measurement from general echocardiography and the LV mass (all *P*>0.05). Compared with control group, endocard longitudinal PSS of group A decreased significantly (*P*>0.05) in all segments of LV, while only in a small part of segments of group B. Compared with group B, endocardial longitudinal PSS of group A segments decreased significantly (all *P*>0.05). Compared with control group, epicardial longitudinal PSS of group A decreased significantly only in a small part of segments (*P*>0.05). There was no statistical difference between group B and control group about epicardial longitudinal PSS (all *P*>0.05). **Conclusion** Using 2D-STI longitudinal strain can detect early systolic dysfunction of LV in thalassemia major children, which is difficult to be detected by general echocardiography. LV systolic dysfunction of thalassemia major children with high level SF is more serious than those with low SF.

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