



## 异常妊娠妇女心脏储备的评估方法及变化规律

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## Change of Cardiac Reserve during Abnormal Pregnancy and Its Evaluation

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摘要

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**摘要** 目的 研究异常妊娠妇女心脏储备的评估方法及变化规律。方法 采用运动心力监测仪对96例异常妊娠、356名正常妊娠及100名健康育龄妇女进行监测, 在静息状态下记录心电图, 测量第1心音幅值与第2心音幅值之比(S1/S2)、舒张期与收缩期的时限之比(D/S)和心率(HR)。结果 正常妊娠组及异常妊娠组的S1/S2和HR明显高于健康育龄组, D/S明显低于健康育龄组(P均<0.001); 异常妊娠组的S1/S2和HR明显高于正常妊娠组, D/S明显低于正常妊娠组(P均<0.001)。D/S低于1.1及S1/S2高于1.8提示妊娠妇女危险性增加。4种常见异常妊娠的妇女心脏储备水平由低到高分别为子痫、双胞胎、妊娠性糖尿病和妊娠高血压。结论 妊娠期间调用了心脏储备, 特别是异常妊娠妇女心脏负担更加沉重, 心脏储备降到更低水平。用S1/S2、D/S和HR评估异常妊娠妇女心脏储备是可行的。

**关键词:** 异常妊娠 心脏储备 运动心力监测仪

**Abstract:** Objective To investigate the change of cardiac reserve during abnormal pregnancy and explore its evaluation methods. Methods Totally 96 women with abnormal pregnancies (AP group), 356 women with normal pregnancies (NP group), and 100 women of childbearing age (CBA group) were monitored by the exercise cardiac contractility monitor (ECCM). Phonocardiogram of participants at resting status was recorded by ECCM. The amplitude of first heart sound (S1), the amplitude of second heart sound (S2), cardiac cycle, diastolic duration (D), and systolic duration (S) were detected and then the S1/S2 ratio, the D/S ratio, and heart rate (HR) were calculated. Results Compared with the CBA group, S1/S2 ratio and HR were significantly higher and D/S was significantly lower in both AP group and NP group (all P<0.001). Compared with the NP group, S1/S2 ratio and HR were significantly higher in AP group and D/S was significantly lower (all P<0.001). A D/S ratio less than 1.1 or S1/S2 ratio higher than 1.8 was associated with higher risk of poor pregnancy outcomes. Among four common pregnancy-associated abnormalities, the level of cardiac reserve was lowest in eclampsia, followed by twins, gestational diabetes mellitus, and gestational hypertension. Conclusions Cardiac reserve is mobilized during pregnancy, and is especially during the abnormal pregnancies due to the heavy cardiac burden. S1/S2 ratio, D/S ratio, and HR are useful in evaluating the cardiac reserve during abnormal pregnancy.

**Keywords:** abnormal pregnancy cardiac reserve exercise cardiac contractility monitor

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