Perubahan heart rate variability pasca intervensi koroner perkutan pada pasien penyakit jantung koroner stabil yang disertai ansietas = Changes in heart rate variability following percutaneous coronary intervention of patients with stable coronary artery disease and anxiety

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Abstrak

Latar belakang. Kondisi iskemia pada penyakit jantung koroner (PJK) berkorelasi dengan disfungsi sistem saraf otonom. Revaskularisasi melalui percutaneous coronary intervention (PCI) dapat mengembalikan keseimbangan fungsi saraf otonom dan memperbaiki prognosis. Di sisi lain, perasaan cemas yang muncul menjelang prosedur PCI, dapat memicu hiperaktivitas simpatis. Tujuan penelitian ini adalah untuk mengetahui pengaruh ansietas terhadap perbaikan heart rate variability (HRV), sebuah teknik non-invasif untuk mengevaluasi aktivitas sistem saraf otonom; setelah tindakan PCI.
Metode. Studi dengan desain potong lintang, korelasi pretest-posttest; melibatkan 44 subjek dengan PJK stabil yang menjalani PCI elektif di Pelayanan Jantung Terpadu, Rumah Sakit Umum Pusat Nasional Cipto Mangunkusumo. Pengukuran HRV dilakukan sebelum PCI, kemudian diulang pasca tindakan PCI. Ansietas dinilai menggunakan kuesioner hospital anxiety depression score (HADS). Pengolahan data serta analisis statistik dilakukan dengan bantuan software SPSS 20.0.
Hasil. Sebanyak 54,5% subjek mengalami ansietas saat akan menjalani PCI. Pada kelompok tanpa ansietas, ditemukan perbaikan signifikan pada parameter HRV sebelum-setelah PCI; yaitu SDNN [standard deviation of normal to normal intervals] (Median = 26,19 vs. Median = 39,60 ; Z = -3,621 ; p < 0,001) dan parameter RMSSD [root mean square of the successive differences] (Median = 21,90 vs. Median = 30,99; Z = -2,501; p = 0,012). Sementara itu, tidak didapatkan perbaikan bermakna parameter HRV sebelum-setelah PCI, pada kelompok ansietas. Terdapat perbedaan bermakna pada kenaikan nilai SDNN antara kelompok tanpa ansietas dibandingkan dengan kelompok ansietas ansietas (Median = 9,11 vs. Median = 2,83 ; U = 154,00 ; p = 0,043).
Simpulan. Ansietas yang terjadi sebelum PCI elektif dapat menghambat perbaikan HRV pasca tindakan sehingga mempengaruhi prognosis penyakit. Diperlukan penelitian lanjutan mengenai peranan terapi ansietas menjelang PCI dihubungkan dengan luaran klinis serta prognosis pasca PCI.
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Background. Chronic ischemic condition in coronary artery disease (CAD) was associated with autonomic dysfunction. Percutaneous coronary intervention (PCI) could restore perfusion so that improving autonomic balance and disease prognosis. On the other hand, pre-PCI anxiety was known to produce sympathetic hyperactivity. The aim of this study was to determine whether pre-PCI anxiety may influence heart rate variability (HRV) improvement, a noninvasive technique for the evaluation of the autonomic nervous system activity; after successful PCI.
Methods. A cross sectional studies, pretest-posttest correlation; enclose 44 patients with stable CAD undergoing PCI in Integrated Heart Service, Cipto Mangunkusumo National Hospital. HRV measurement was done before and after PCI. Anxiety symptoms was collected using hospital anxiety depression score (HADS) questionnaires. Data input and statistical analysis was carried out using SPSS 20.0 for Windows.

Results. As many as 54.5% stable CAD patients undergoing elective PCI experienced anxiety symptoms. In the anxiety group, there were significant post-PCI improvement of SDNN [standard deviation of normal to normal intervals] (Median = 26.19 vs. Median = 39.60; $Z = -3.621$; $p < 0.001$) and RMSSD [root mean square of the successive differences] (Median = 21.90 vs. Median = 30.99; $Z = -2.501$; $p = 0.012$). Post-procedure HRV improvement was not significant in patients with anxiety symptoms. There was significant difference of the SDNN improvement between non-anxiety and anxiety patients (Median = 9.11 vs. Median = 2.83; $U = 154.00$; $p = 0.043$).

Conclusions. Pre-PCI anxiety may affect HRV improvement after revascularization thus influence disease prognosis. Further studies are needed to determine the impact of pre-PCI anxiety treatment on cardiac outcomes.