

INTISARI

NILAI DIAGNOSTIK PENINGKATAN AMPLITUDO r' DI SADAPAN V1 SAAT TAKIKARDIA DALAM DIAGNOSIS TAKIKARDIA REENTRI NODUS ATRIOVENTRIKULAR (TaRNAV) TIPIKAL

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Latar Belakang: Takikardia reentri nodus atrioventrikular (TaRNAV) merupakan jenis takikardia supraventrikular (TSV) terbanyak, dimana TaRNAV tipikal mencakup 90% kasus TaRNAV. Substrat TaRNAV adalah jaras nodal atrioventrikular ganda dengan mekanisme aritmia reentri. Sekitar 50% TaRNAV terjadi pertama kali pada rentang waktu usia produktif sehingga TaRNAV sangat mempengaruhi kualitas hidup penderita. Alat diagnostik baku TaRNAV adalah studi elektrofisiologi, namun alat tersebut bersifat spesialisistik, invasif, dan tidak tersedia secara luas. Rekam EKG 12 sadapan saat sinus dan takikardia dapat menjadi alat diagnostik yang sederhana dan tersedia luas. Penelitian pendahulu tentang parameter EKG diagnostik TaRNAV tipikal tidak menganalisis populasi dengan r' di V1 saat sinus. Padahal terdapat 7% populasi normal dengan r' di V1 saat sinus yang dapat mengalami peningkatan amplitudo r' di V1 saat takikardia sehingga hal tersebut menjadi bias.

Tujuan: Mengetahui nilai diagnostik peningkatan amplitudo r' di sadapan V1 saat takikardia dalam penegakan diagnosis TaRNAV tipikal melalui EKG 12 sadapan.

Metode: Sebanyak 115 pasien TSV yang menjalani studi elektrofisiologi dimasukkan sebagai subjek penelitian. Analisis rekam EKG saat sinus dan takikardia dilakukan oleh 2 orang Kardiolog yang buta terhadap penelitian untuk menghitung peningkatan amplitudo r' di sadapan V1. Titik potong optimal didapatkan melalui kurva *receiver operating characteristic* (ROC). Selanjutnya dilakukan uji sensitivitas dan spesifisitas menggunakan analisis tabel 2x2. Analisis bivariat dilanjutkan analisis multivariat dilakukan untuk mendapatkan parameter EKG independen.

Hasil: Nilai batas peningkatan amplitudo r' di V1 saat takikardia adalah $\geq 0,040$ mV pada subjek tanpa r' saat sinus dan $\geq 0,035$ mV pada subjek dengan r' saat sinus. Penelitian ini menunjukkan peningkatan amplitudo r' di V1 saat takikardia merupakan parameter independen untuk diagnosis TaRNAV tipikal dan peningkatan amplitudo r' di V1 saat takikardia memiliki nilai diagnostik yang baik untuk mendiagnosis TaRNAV tipikal dengan sensitivitas 62%, spesifisitas 95%, nilai duga positif 98%, nilai duga negatif 41%, LR positif sebesar 12,9, LR negatif sebesar 0,4, dan akurasi 68%.

Simpulan: Peningkatan amplitudo r' di V1 saat takikardia merupakan parameter independen dan memiliki nilai diagnostik yang baik dalam diagnosis TaRNAV tipikal.

Kata Kunci: takikardia reentri nodus atrioventrikular tipikal, TaRNAV, EKG, nilai diagnostik

ABSTRACT

DIAGNOSTIC VALUE OF INCREASE IN r' AMPLITUDE AT LEAD V1 DURING TACHYCARDIA IN TYPICAL ATRIOVENTRICULAR NODAL REENTRANT TACHYCARDIA (AVNRT)

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Background: Atrioventricular nodal reentrant tachycardia (AVNRT) is most common type of SVT, which 90% cases are typical AVNRT. Substrate of AVNRT is dual AV nodal (DAVN) with basic mechanism of arrhythmia is reentry. In 50% of patients the first episode happens on working age and influences the quality of life. Electrophysiology study as gold standard for AVNRT diagnostic is specialized, invasive, and not widely available. Twelve-lead electrocardiogram (ECG) was conducted during tachycardia and sinus rhythm could be a simple and widely available diagnostic tool. None previous studies had analyzed population with r' in V1 during sinus in ECG parameter for diagnosing typical AVNRT. In fact, there are 7% of the normal population with r' in V1 during sinus, which could increase r' amplitude during tachycardia so that it becomes biased.

Objective: Determine the diagnostic value of increase in the r' amplitude in lead V1 during tachycardia in the diagnosis of a typical AVNRT on a 12-lead ECG.

Method: A total of 115 SVT patients who underwent electrophysiological studies were included as subjects. Two cardiologists who were blind to the study performed ECG record analysis during sinus and tachycardia to calculate the increase in the r' amplitude in lead V1. The optimal cutoff point is obtained through the receiver operating characteristic (ROC) curve. Furthermore, the sensitivity and specificity tests were carried out using 2x2 table analysis. Bivariate analysis followed by multivariate analysis was performed to obtain independent ECG parameters.

Result: Cut off values for increasing the amplitude of r' at V1 at tachycardia were ≥ 0.040 mV in subjects without r' at sinus and ≥ 0.035 mV in subjects with r' at sinus. This study showed an increase in the amplitude of r' in V1 during tachycardia was an independent parameter for the diagnosis of typical AVNRT and had a good diagnostic value for diagnosing typical AVNRT with sensitivity 62%, specificity 95%, positive predictive value 98%, negative predictive value 41%, positive likelihood ratio 12.9, negative LR likelihood ratio, and an accuracy 68%.

Conclusion: Increase in the r' amplitude at lead V1 during tachycardia is an independent parameter and has good diagnostic value in the diagnosis of typical AVNRT.

Keyword: typical atrioventricular nodal reentrant tachycardia, AVNRT, ECG, diagnostic value