

# Pola refluksat yang diperiksa dengan ph-metri impedans intraluminal multikanal sebagai prediktor keberhasilan terapi empiris proton-pump inhibitor pada pasien gastroesophageal reflux disease = Refluxate patterns evaluated using combined multichannel intraluminal impedance and ph monitoring to predict treatment response proton pump inhibitor in patients gastroesophageal reflux disease

Hardianto Setiawan, author

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## Abstrak

Latar Belakang: Pemeriksaan impedans intraluminal multikanal dan pemantauan pH (MII-pH) baru diperkenalkan untuk mengevaluasi karakteristik refluksat pada pasien gastroesophageal reflux disease (GERD). Penggunaan MII-pH untuk prediksi hasil terapi empiris proton-pump inhibitor (PPI) belum dievaluasi.

Tujuan: Mengevaluasi pola refluksat menggunakan MII-pH untuk memprediksi respons terapi empiris dengan PPI pasien GERD.

Metode: Penelitian ini merupakan studi prospektif dengan desain before-and-after treatment. Pasien direkrut dari Poliklinik Gastroenterologi, Departemen Ilmu Penyakit Dalam RS Cipto Mangunkusumo antara Desember 2015 dan Februari 2016. Diagnosis GERD ditegakkan menggunakan kuesioner GERD (GerdQ). Endoskopi saluran cerna atas dilakukan untuk membedakan erosive (ERD) dan non-erosive reflux disease (NERD). Semua pasien menjalani pemeriksaan MII-pH evaluasi yang terdiri dari bentuk refluksat (cair, gas atau campuran); jenis refluksat (asam atau non-asam); dan persentase acid exposure time (AET). Kemudian pasien mendapat terapi PPI oral, dua kali sehari selama 14 hari. Respons terapi dievaluasi dengan GerdQ. Prediktor respons terapi dianalisis menggunakan analisis multivariat.

Hasil: Sejumlah 75 pasien dilibatkan dalam studi; 39 (52%) di antaranya adalah perempuan. Rerata usia adalah 40,4±10,20 tahun. Rerata skor GerdQ awal adalah 14 dan turun sampai 8 setelah terapi PPI empiris ( $p < 0,001$ ; uji t berpasangan). Sebanyak 41 (54,7%) pasien responsif terhadap terapi PPI. Respons terapi berhubungan dengan jenis GERD (OR: 3,763; IK95%: 1,381-10,253;  $p = 0,008$ ); jenis refluksat (OR: 10,636; IK95%: 2,179-51,926;  $p = 0,001$ ); dan AET (OR: 5,357; IK95%: 1,974-14,541;  $p = 0,001$ ). Analisis multivariat mendapatkan dua prediktor independen terhadap terapi PPI, yaitu jenis refluksat (ORadj: 6,273; IK95%: 1,207-32,609;  $p = 0,029$ ) dan AET (ORadj: 3,363; IK95%: 1,134-9,974;  $p = 0,029$ ).

Kesimpulan: Terdapat perbedaan respons terapi empiris PPI dimana ERD lebih responsif dari NERD, refluks asam lebih responsif dari non asam dan AET tinggi lebih responsif dari pada AET normal.

Keberhasilan terapi empiris PPI dapat diprediksi dari jenis refluksat dan nilai AET.

.....Background: Combined multi-channel intraluminal impedance and pH monitoring (MII-pH) has been recently introduced to characterize patients with gastroesophageal reflux disease (GERD). The use of MII-pH to predict initial treatment response with proton-pump inhibitor (PPI) has not been evaluated.

**Objective:** To evaluate refluxate patterns using MII-pH to predict initial treatment response using PPI for GERD patients.

**Method:** This was a prospective study using before-and-after treatment design. Patients were enrolled in the Gastroenterology Polyclinic, Department of Internal Medicine, Cipto Mangunkusumo Hospital between December 2015 and February 2016. Diagnosis of GERD was established using GERD questionnaires (GerdQ). Upper endoscopy was done to distinguish erosive (ERD) and non-erosive reflux disease (NERD). All patients underwent MII-pH evaluation consisting of physical characteristics of the refluxate (liquid, gas or mixed); type of refluxate (acid or non-acid); and percent acid exposure time (AET). Then patients were given oral PPI treatment, twice a day, for 14 days. Treatment response was evaluated using GerdQ. Predictor of treatment response was analyzed using multivariate analysis.

**Results:** A total of 75 patients was enrolled; 39 (52%) of them were women. Mean age was 40.4±10.20 years. Initial mean GerdQ score was 14 and reduced to 8 after empirical PPI therapy ( $p < 0.001$ ; paired t test). Forty-one (54.7%) patients responded to PPI therapy. Treatment response was associated with type of GERD (OR: 3.763; 95% CI: 1.381-10.253;  $p = 0.008$ ;) type of refluxate (OR: 10.636; 95% CI: 2.179-51.926;  $p = 0.001$ ); and AET (OR: 5.357; 95% CI: 1.974-14.541;  $p = 0.001$ ). Multivariate analyses found two independent predictors of treatment response to PPI therapy, i.e. the type of refluxate (OR<sub>adj</sub>: 6.273; 95% CI: 1.207-32.609;  $p = 0.029$ ) and AET (OR<sub>adj</sub>: 3.363; 95% CI: 1.134-9.974;  $p = 0.029$ ).

**Conclusion:** There are differences in response to empiric PPI therapy where ERD is more responsive than NERD, acid reflux is more responsive than non-acid and high AET is more responsive than a normal AET. PPI empirical therapy success can be predicted from the type and value refluxate AET.