

## Analyzing determinant factors for pathophysiology of functional dyspepsia based on plasma cortisol levels, il-6 and il-8 expressions and h. pylori activity

Arina Widya Murni, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20470691&lokasi=lokal>

---

### Abstrak

**Background:** There are many determinant factors that may play roles in pathophysiology of functional dyspepsia. One of them is psychological stress that can increase plasma cortisol levels, alter inflammation process and affect helicobacter pylori activity. No study has been conducted to find out the dominant factor among them. This study aimed to find the dominant factor among plasma cortisol levels, IL-6 and IL-8 expressions and H.pylori activity, as the determinant factors in the pathophysiology of functional dyspepsia. **Methods:** a cross-sectional study was conducted in 80 patients with dyspepsia syndrome at M.Djamil General Hospital, Padang, West Sumatera, Indonesia. The patients were categorized into two groups, i.e. the stress and non-stress group, which were identified using DASS 42 questionnaire criteria. The inflammatory expressions (IL-6 and IL-8 expressions) as well as H. pylori activity were determined using immunohistochemistry of gastric biopsy specimens; while plasma cortisol levels were measured from peripheral blood samples. Data were analyzed using binary multivariate logistic regression.

**Results:** there were 80 patients with functional dyspepsia with mean age of 38.9 years old. The morning cortisol level was found significantly higher in the stress group. Higher IL-6 and IL-8 expressions were found in patients of non stress group compared to those in the other group (IL-6; 73.28 (SD 16.60) vs. 72.95 (SD 19.49) and IL-8 18.45 (SD 17.32) vs. 14.80 (SD 12.71)) although statistically not significant. There was greater helicobacter pylori activity in the group with psychological stress compared to those in the non-stress group since there was antigen-antibody reaction invading the submucosa. The dominant determinant factor was the afternoon plasma cortisol levels.

**Conclusion:** many factors can become the determinant factors for gastric mucosal damage; however, our study has demonstrated that the dominant factor is afternoon plasma cortisol levels.

.....Latar belakang: berbagai faktor penentu diduga berperan dalam patofisiologi dispepsia fungsional, salah satunya adalah stres psikologis yang dapat meningkatkan kortisol, mengubah proses inflamasi dan memengaruhi aktivitas H. pylori. Sampai saat ini belum ada penelitian yang menentukan faktor penentu mana yang dominan diantaranya. Tujuan penelitian ini untuk menemukan faktor mana yang dominan di antara kadar kortisol plasma, ekspresi IL-6, IL-8 dan aktivitas H. pylori sebagai faktor yang mempengaruhi patofisiologi dispepsia fungsional.

**Metode:** penelitian potong lintang ini dilakukan pada penderita sindrom dispepsia di Rumah Sakit Umum M. Djamil, Padang, Sumatera Barat, Indonesia. Pasien dibagi menjadi dua kelompok yakni kelompok stres dan kelompok non-stres berdasarkan kriteria pada kuesioner DASS 42. Penilaian ekspresi inflamasi (IL-6 dan IL-8) dan aktifitas H. pylori dilakukan dengan pemeriksaan imunohistokimia pada jaringan biopsi mukosa lambung dan kadar kortisol plasma diukur dari sampel darah perifer. Data kemudian dianalisis dengan menggunakan regresi logistik multivariat biner.

**Hasil:** terdapat 80 orang penderita dispepsia fungsional, dengan rerata umur 38,9 tahun. Kadar kortisol plasma pagi hari meningkat bermakna pada kelompok yang mengalami stres. Ekspresi IL-6 dan IL-8 lebih

tinggi pada kelompok non stress dibandingkan dengan kelompok stress, namun tidak bermakna secara statistic (IL-6: 73,28 (SB 16,60) vs. 72,95 (SB 19,49); dan IL-8: 18,45 (SB 17,32) vs. 14,80 (SB 12,71) (stres). *Helicobacter pylori* pada kelompok stres lebih aktif karena reaksi Ag-ab menginvasi submukosa. Faktor yang dominan berperan pada dispepsia fungsional adalah kadar kortisol plasma sore hari. Kesimpulan: banyak faktor dapat menjadi faktor determinan dari kerusakan mukosa lambung. Kadar kortisol plasma sore hari merupakan faktor yang dominan.