

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

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Abstrak

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. Method: 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.