

Parameters of T-, B-lymphocytes and IL-6 during Gastroduodenal Diseases Caused by Helicobacter Pylori

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ABSTRACT

Helicobacter pylori (H.P.) induced immune reactions play leading role in the damage of gastroduodenal zone mucous membranes. At the same time it is known that cytokines production by peripheral blood cells has some influence on the stomach epitheliocytes and development of inflammatory process in stomach membranes. Proceeding from the above mentioned we aimed to investigate peripheral blood T-, B-lymphocytes and IL-6 during gastroduodenal diseases. We have observed patients with ulcer disease (20), chronic gastroduodenal disease (32 patients) and mixed form of ulcer and chronic gastroduodenal diseases (37 patients). There was no difference found between groups while comparing quantities of T- and B-lymphocytes, T-suppressors. The active fraction of T-lymphocytes was statistically reliably decreased in the mixed group in comparison with the chronic group. It should be mentioned that there is a tendency of T-active lymphocytes increase in the group of patients with chronic course of disease in comparison with all other groups. IL-6 concentration in peripheral blood was the highest in the chronic group. Accordingly, there is increase in T-active and T-helper lymphocyte quantity, as well as IL-6 concentration in peripheral blood during chronic gastroduodenal diseases. All the above-mentioned give us opportunity to conclude that quantitative determination of T-lymphocytes subpopulations and IL-6 is significant factor for diagnosis of chronic forms of gastroduodenal pathology.

KEYWORDS: *helicobacter pylori, T- and B-lymphocytes, IL-6*

Immune reactions induced by Helicobacter pylori (H.P.) infections play leading role in the damage of mucous membrane of gastroduodenal zone [1]. The peptic ulcer may be the result of CD4 immune reaction on the H.P. antigen and immunopathological processes caused by it (2). At the same time it is known that cytokines production by peripheral blood cells has some influence on the stomach epitheliocytes and development of inflammatory process in stomach mucous membranes [3].

Proceeding from the above-mentioned we aimed to investigate T- and B-lymphocytes population and IL-6 production in the peripheral blood during gastroduodenal diseases.

The estimation of the T-lymphocytes' general population and active T-lymphocytes in the peripheral blood of the patients was performed by the method of rosettes [4]. The investigation of T-helpers and T-suppressors was made according to the quantity of sensitive and resistant to teophyllin populations [5]. IL-6 was investigated by

ELISA method. B-lymphocytes were measured by the method of direct immunofluorescentation.

We have studied the following groups of patients: I - ulcer disease (20 patients), II - chronic gastroduodenal disease (32 patients), III - mixed form of ulcer and chronic gastroduodenal disease (37 patients); IV - control group (13 healthy persons). The quantitative parameters of T-lymphocytes general population, its active fraction and B-lymphocytes are presented in Fig.1. As it is shown in the diagram there was no difference in the quantity of general population of T lymphocytes between control and research groups, but in the mixed group there was tendency of decline in T lymphocytes general population. The quantitative parameters of T lymphocytes active fractions were low in comparison with chronic group ($p < 0,05$). It should be mentioned that in spite of statistically unreliable difference between all other groups there is tendency of increase in T-lymphocytes number. There is no statistically reliable difference in any group for B-lymphocytes.

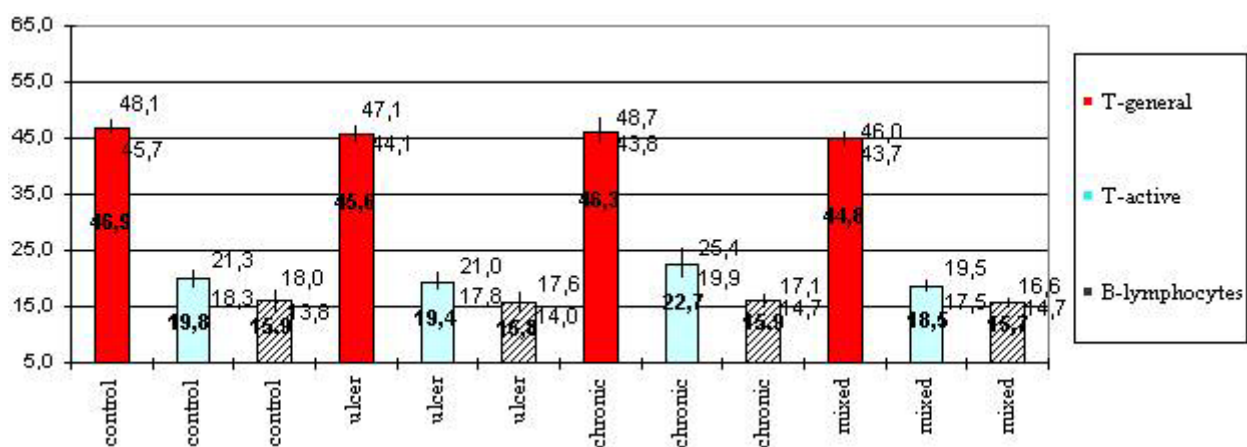


Fig.1 Average and confidential intervals for T-general, T-active and B-lymphocytes parameters in different groups.

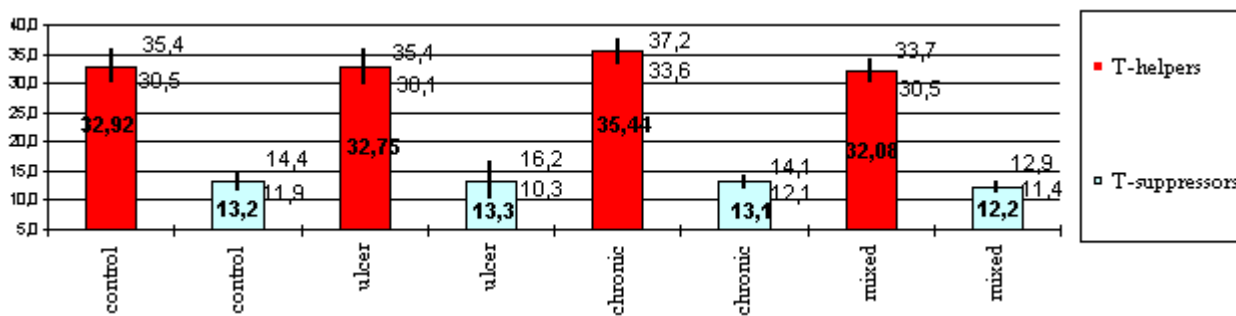


Fig.2 Average and confidential intervals for T-helpers, and T-suppressors parameters in different groups.

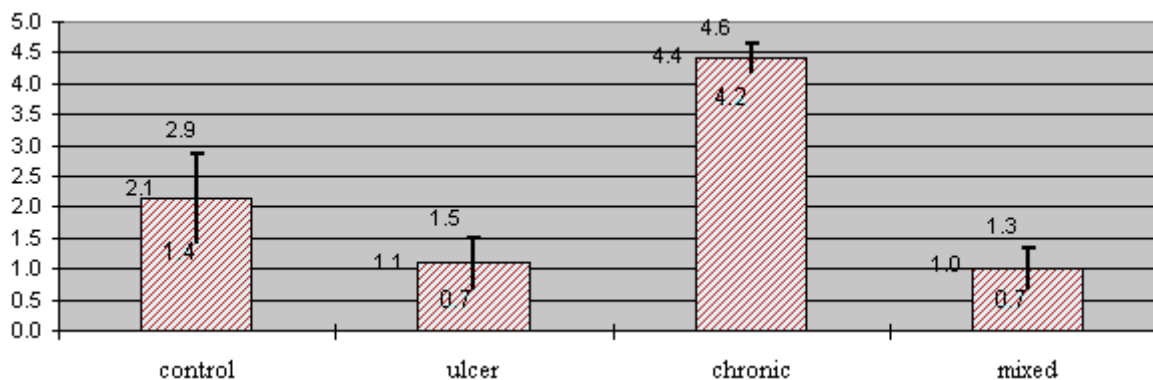


Fig.3 Average and confidential intervals for IL-6 general parameters in different groups.

T-helpers and T-suppressors (consequently resistant and sensitive to theophyllin) quantitative parameters are shown in Fig.2. As it could be seen from the diagram the difference in T-helpers quantitative parameters between chronic and mixed groups approaches statistically reliable scope. There is the tendency of T-lymphocytes parameters to increase in chronic patients group in comparison with all other groups. The immunoregulation index didn't show any statistically reliable difference between the groups. Except T- and B-lymphocytes investigation of IL-6 was performed in peripheral blood. The received data is presented in Fig.3. It shows that IL-6

quantity is the highest in patients with chronic gastroduodenitis. This difference is statistically reliable.

The tendency of some correlation between the quantitative increase of T-active lymphocytes, T-helpers and concentration of IL-6 could be seen from all three diagrams. This correlation logically proceeds from the fact that IL-6 is product of T-helpers [3]. According to the received data we could conclude that quantitative analysis of IL-6, T-lymphocytes helper subpopulation and T-lymphocytes active fraction in peripheral blood provides important information for diagnosis of chronic gastroduodenic forms.

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Показатели Т- и В-лимфоцитов и ИЛ-6 при гастродуоденальных заболеваниях, вызванных *Helicobacter pylori*

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РЕЗЮМЕ

Индуцированные *Helicobacter pylori* (*H.pylori*) инфекцией иммунные реакции играют ведущую роль в повреждении слизистой гастродуоденальной зоны. Продукция цитокинов клетками периферической крови определенным образом влияет на развитие воспалительного процесса в слизистой оболочке желудка. Исходя из этого, мы задались целью изучить состояние Т- и В-лимфоцитов периферической крови и продукции Ил-6 при гастродуоденальных заболеваниях. Обследованы больные с гастродуоденальной язвенной болезнью (20 больных), хроническим гастродуоденитом (32 больных) и больные со смешанной формой гастродуоденальной патологии (37 больных). При сравнении количеств Т- и В- лимфоцитов, а также Т- супрессоров разница между отдельными группами не выявлена. Активная фракция Т- лимфоцитов статистически достоверно понижена в смешанной группе больных в сравнении с «хронической» группой. Обнаружена тенденция роста количества Т- активных лимфоцитов в группе больных с хронической формой в сравнении с другими группами. Концентрация Ил-6 периферической крови выше при хронической форме. Таким образом, выявлено увеличение количества Т- активных и Т- хелперных лимфоцитов наряду с ростом концентрации Ил-6 периферической крови при хроническом гастродуодените. Исходя из вышеизложенного, можно заключить, что количественное определение субпопуляции Т- лимфоцитов и Ил-6 является значительным подспорьем при комплексной диагностике хронического гастродуоденита, индуцированного *Helicobacter pylori*.

КЛЮЧЕВЫЕ СЛОВА: *helicobacter pylori*, Т- и В-лимфоциты, ИЛ-6