

# The action of Mastiha in the prevention and treatment of digestive system disorders

**Of special interest are the results of modern scientific studies, that relate to the therapeutic action of mastiha in digestive system disorders. Already from ancient years it was known that Chios Mastiha constituted a drastic ingredient for soothing the pain of stomach, e.g., gastric disorders, indigestion problems, gastralgia, as well as digestive ulcers. Written references from physicians of the time, practitioners and botanists, as well as references in pharmaceutics of the ancient and medieval times recommend Chios Mastiha as a beneficial means for the diseases and disorders of gastro-intestinal system. In our time, scientific, laboratory studies as well as clinical researches, come to confirm the above important action of Chios Mastiha.**

The first research efforts have been made in university institutions and clinics of the Arab world, in areas where the use of Chios Mastiha is especially spread even in nostrums and formulas of practical medicine.

The first clinical study(21, 22), published in 1984 in *Clinical & Experimental Pharmacology & Physiology* magazine was conducted by Al-Habbal MJ, Al-Habbal Z, Huwez FU in the university clinic of Mosul University in Iraq. In this study 38 volunteers participated. These volunteers had symptoms, and endoscopic confirmation of duodenal ulcer. For the comparison of the effectiveness of Chios Mastiha, the volunteers were divided in two groups: in those that consumed Chios Mastiha for two weeks (1 gram per day) and those that consumed the same dosage of placebo powder (lactose) for the same time period. After the lapse of two weeks all the volunteers were endoscopically examined, in order to see the progress of the ulcer. The results showed that in the group that consumed mastiha there was an alleviation of the symptoms in 80% of the cases, while the endoscopic examination has confirmed that duodenal ulcer was cured in 70% of the cases. The conclusions of the clinical study recommend mastiha as drastic element for the alleviation and the treatment of ulcer symptoms. Another important conclusion of the research was that the use of Chios Mastiha produced no unwanted side-effect.

The same research team has published(23) in 1986 in the *Gastroenterologia Japonica* magazine the findings of a new clinical study in patients who suffered of gastric ulcers, of benign nature. For this purpose, to six patients to whom gastric ulcer was diagnosed by means of gastroscopy, Chios Mastiha was administered in the dosage of 2 grams per day for four weeks (1 gram before breakfast and 1 gram before sleeping at night). No patient was administered another type of pharmaceutical treatment, for a time period of at least two months before the initiation of the clinical study. For the evaluation of the action of mastiha gastroscopies were conducted as well as routine laboratory controls in the blood, urine, and other biochemical parameters, before the initiation of the treatment, two weeks after, four weeks after and two months after the initiation of mastiha administration. The results of the study have shown that the administration of mastiha has relieved all six patients that participated in the search from the symptoms, while the treatment was even endoscopically confirmed in five of them. During the study, but also two months after its completion no type of unwanted effect was found, nor any unusual result in the laboratory analysis.

In the same year (1986) in *Journal of Ethnopharmacology* magazine a study(24) was published by Mansoor S. Al-Said et al., in guinea-pigs (mice), which was conducted in order to evaluate the

effectiveness of mastiha against gastric ulcer and duodenal ulcer. For this purpose, with the use of the appropriate chemicals ulcer was formed in the stomach of the mice. Afterwards, through their food, mastiha was administered to them in the proportion of 500mg per guinea-pig kilo. The results of the study have shown that the administration of Chios Mastiha has produced an important decrease in the expansion and intensity of the formed ulcer in the gastric membrane of the guinea-pigs, suggesting that it can be used as treatment means of the locally formed ulcer.

In 1998, a study(25) that was published in the famous magazine New England Journal of Medicine, by the University Hospital of Nottingham in England, has reached the conclusion that Chios Mastiha has a decidedly proven action against HP. Note that the title of the publications is especially characteristic: "Mastiha Gum Kills Helicobacter pylori". The study shows the findings that suggest that even 1 gram of mastiha per day, for a time period of two weeks may cure digestive ulcer. This beneficial action, is due to the fact that mastiha exterminates Helicobacter pylori which is liable for the majority of the digestive ulcer cases. Note that Helicobacter pylori is responsible for 75% of digestive ulcer cases, while the respective amount in the case of duodenal ulcer amounts to 90%. In the specific study fresh samples were used with the presence of Helicobacter pylori, which were isolated from patients and the minimum bactericidal concentration (MBC) of mastiha was searched, which means the minimum concentration required in order to exterminate 99.9% of the bacterium within 24 hours. Mastiha exterminated the bacterium in all the examined samples, regardless of the size of the population. The minimum bacterial concentration (MBC) of mastiha was 60 µg/ ml, but even in smaller concentrations, the antibacterial action was especially important.

In 2001 announcements(26, 27) by Serafino G. Bona et al. Published in The American Journal of Gastroenterology, and Journal of Chemotherapy magazines come to confirm the effectiveness of mastiha against helicobacter pylori. For this purpose clinical samples were used with the presence of HP, which were isolated from patients and the Minimal Bactericidal Concentration (MBC) of mastiha extraction was searched. The results showed that the mastiha in concentration of 125 µg/ml killed the helicobacter in 50% of the examined samples, while concentration 500 µg/ml has exterminated the helicobacter in 90% of the samples. At the same time, in all the samples that were studied morphological changes have been identified in the bacterium after the use of electronic microscope. The results of the study are in absolute harmony with the ones of the above researchers and they reach the conclusion that the Mastiha has an especially good action against HP.

In another study(28) conducted in the Medical Microbiology Laboratory of the Greek Pasteur Institute, on May 2002, it is established that the administration of Chios Mastiha in guineapigs (mice), that were infected with helicobacter pylori, resulted in a substantial decrease of the immigration degree of the bacterium, while there was no record of important decrease in the degree and the activity of the accompanying gastritis.

Respectively, in 2002 in South Korea Society of Gastroenterology magazine a clinical study (29) has been published. The study had been conducted by the Medical School of Dan-kook University in South Korea, concerning the action of mastiha against gastritis caused by Helicobacter pylori (HP). For this purpose 48 volunteers participated, and it was discovered that they were infected by the helicobacter, with the use of UBT - UREA BREATH TEST technique: breath test for detecting HP. The participants were divided in two groups the first of which used Chios Mastiha chewing gum for 90 days, while the second one used placebo gum. The UBT test was applied on patients before the initiation of the study as well as in intervals of 30 and 90 days following the completion. The results of the tests have shown that the use of mastiha is especially effective in limiting the concentration of helicobacter pylori as well as the gastritis due also to helicobacter pylori, reaching the conclusion that it can be used as an additional means for containing the bacterium and its effects.

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