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ISOLATION OF *HELICOBACTER PYLORI* FROM DRINKING WATER OF AL-REFAI CITY AND STUDY THE EFFECT OF ZEOLITE POLYMER ON THEM

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ABSTRACT : The study included knowledge of the effect of using beads of the strong cationic and anionic resin(zeolite) in reducing the numbers of *Helicobacter pylori* in drinking water in Al-Refai city, DhiQar province, Iraq. Both types of resins showed great efficiency in reducing the numbers of bacteria in drinking water, after they had been treated with 3% hydrochloric acid as for the cationic resins and by 3% sodium hydroxide as for the anionic resins.The reduction was significant at contact time of 15 and 30 minutes. The rate of the reduction at both times were (100%) as for the cationic resin while the reduction rate in case of using anionic resin was lower than the cationic resin. The efficiency of the beads of the cationic and anionic resin in reducing the number of bacteria was lower when they were washed by distilled water only. Again the cationic ion exchange resins was more efficient than the anionic resin. The study concluded that the resins of Amber lite type, which has never been, as to our know ledge in purifying water, is an efficient material to draw the bacteria of water. Hence, it has been concluded that these resins can be used in purifying drinking water instead of using chlorine, ozone or the uv-light.

Key words : *H. pylori*, drinking water, ionic exchange, zeolite.

INTRODUCTION

Microorganisms exist in soil, air, also in both of salty and fresh aquatic environments, which accountformore than 70% of the Earth's surface, or 139 million square miles. As a matter of fact water is consideredas a basic means for transporting various pathogens, whether treated or untreated, the problem of waterpollution in microscopic areas remains a problem for many countries, including developed countries (Kalaf, 1987; Kaneko and Igarashi, 1981).

Bacterial growth conceder a major problem in the water distribution system as well as in domestic water filters (Payment, 1989). The World Health Organization (WHO) reports that 80% of diseases are caused by water contamination in pathogenic microorganisms. Microorganisms in the water have serious effects on human health (Kaneko and Igarashi, 1981). Half of the diseases diagnosed in hospitals worldwide are related to diseases resulting from water contamination with bacteria. (Biswas, 1983 and Bourne, 1982).

Microorganisms in water vary according to the quality of the water, since the microscopic life in the surface water is different from that found in groundwater and air water. Even water can be a source of many diseases because of inaccuracies in treatment, as there is little water does not need treatment before the person to drink or for other purposes. The treatment of water aims to remove the turbidity, smell and unwanted taste, as well as remove some metals such as iron, manganese and remove the hard to fit the industry and washing and most important of all this elimination of pathogenic and unwanted bacteria and the removal of toxic chemicals. Numerous attempts to get waternon-polluting sources and search ways of purification are honest and although it is still more than half the world's population do not have access to safe drinking water, noting that the construction of modern water purification plants costs less than the treatment of water pollution disease costs (Almusleh, 1988; Melgar *et al*, 1997).

Techniques and transactions may not be similar depending on the type of surface water and the purpose of using this water, all transactions aimed at obtaining safe water for human consumption Bacterium and chemical as well as acceptable qualities such as smell, taste (Almusleh, 1988). In addition to the above, the treatment systems must be highly susceptible to reduction of germs (Kaneko, 1997).

Disinfection is one of the most important processes and the last one to arrest or kill pathogens in the water distribution system (Hoff, 1986; Weiner, 1976). The water