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INCIDENCE OF HELICOBACTER PYLORI ANTIBODIES IN SUBJECTS WITH DOWN SYNDROME*

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The Helicobacter pylorus (HP) is a Gram-negative bacterium that colonizes the antral portion of the stomach. It is the major aetiological agent responsible for chronic gastritis, gastric and duodenal ulcer disorders. This bacterium is widespread within the adult population (36.9%-53%), and the incidence of infection is positively correlated with age (6-20% in paediatric populations of Western Europe). The higher frequency among subjects with immunodeficiency and poor hygienic conditions has been pointed out. People with Down syndrome show higher susceptibility to this infection. The present study deals with the serological assay of IgG antibodies to HP in subjects with Down syndrome. We evaluated 77 subjects with Down syndrome, sex ratio M:F, 1:3, aged 1 to 40.7 years (mean 13.5). All were assayed for IgG antibodies to HP by the ELISA method. Subjects were separated into two groups according to age. The first group was made up of 46 subjects aged up to 14 years, and the second group contained 31 subjects over 14 years of age. Nine subjects (19.5%) in the first group and 16 subjects (51.6%) in the second group showed an antibody titre compatible with HP infection. The incidence in the whole sample of 77 subjects with Down syndrome was 32.4%. Therefore, people with Down syndrome do not seem to show a higher susceptibility to HP infection.

Keywords: Down syndrome, helicobacter pylori, IgG

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Introduction

The Helicobacter pylori (HP) is a motile gram-negative bacterium, which has a flagellum and colonizes the antral portion of the stomach, multiplying within the mucus in the crypts and adhering to the epithelium, where it has a cytotoxic effect. It is considered to be the major aetiological agent responsible for antral gastritis, duodenal and gastric ulcers. Furthermore, it seems to play an important role in the pathogenesis of gastric cancer (Warren & Marshall, 1983; Parsonnet, Friedman, & Vandersteen, 1991; Newell, 1991; Blaser, 1992). HP infection has a world-wide distribution, with a variable incidence. It has an equal sex ratio, but the incidence is higher among blacks, Hispanics and in developing countries (Mégrand, 1989; Malaty, Evans, Evans, & Graham, 1992). Recently, epidemiological surveys have been extended to the paediatric population, and the frequency of people with high levels of antibodies to HP has been reported to increase with age (Perez-Perez, Dworkin, Chodos, & Blaser, 1988; Blecker, Keymolen, Lanciers, Bahwere, Sonayah, et al., 1994). The HP infection rate is higher among children from developing countries (Mégrand, 1989). Epidemiological surveys carried out in Western countries show a rate of HP infection ranging from 6 to 20% in unselected paediatric populations (Lindkvist, Asrat, Nilsson, Tsega, Olsson, et al., 1996; Rigillo, Francavilla, & Rutigliano, 1996; Granstrom, Tindberg, & Blennow, 1997) reaching values from 36.9 to 53%

in adults (Glasbrenner, Malfertheiner, Nilius, Steinbruck, Bruckel et al., 1996; Martin de Argila, Boixeda, Canton, Mir, de Rafael et al., 1996). The incidence of HP is considerably higher among subjects with immunodeficiency and poor hygienic conditions (Blecker, Lanciers, Hanser, & Vandenplas, 1994). Down syndrome is associated with a defect of the immune function (Ugazio, Maccario, Notarangelo, & Burgio, 1990). In the present study, we evaluated the incidence of HP infection among subjects with Down syndrome, followed up in our Department, by assaying the level of HP antibodies. We ruled out people in institutions (Mégrand, Bounet, Garbier, & Lamouliatte, 1985). The higher incidence of HP infection inside closed communities has already been demonstrated.

Subjects and Methods

We evaluated 77 subjects with Down syndrome, 44 males and 33 females (sex ratio M/F: 1.3), aged 1 to 40.7 years (mean age: 13.5 years). All were assayed for IgG antibodies to HP by the ELISA method. (Helori-test, Eurospital Pharma, Trieste, Italy). Values above 9% for children (0-14 years) and above 22% for adults (over 14 years) were considered positive for HP infection. Subjects were separated into two groups according to age. The first group was made up of 46 subjects aged up to 14 years (mean age 7.6 years), and the second group consisted of 31 subjects aged over 14 years (mean age 22.2 years).

Results

Nine subjects (19.5%) in the first group showed an antibody titre compatible with HP infection and sixteen subjects (51.6%) in the second group had an antibody titre compatible with HP infection. The incidence of the whole sample of 77 subjects with Down syndrome was 32.4%.

Discussion

We believe that our results are meaningful, because the sample is made up of an adequate number of unselected subjects with Down syndrome, who were not institutionalised, but who were equally distributed for sex and separated in two age groups of similar size. The incidence of HP infection as determined by the serum assay of antibodies is not very different from that reported in epidemiological surveys performed on unselected populations from Western European countries. We would like to investigate the implications of this finding by relating antibody titres to endoscopy and histological findings. The aim of this last correlation would be to search for the same discrepancy between antibody response and mucosal lesions already reported in the general population.

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