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**INTRODUCTION:** Various pathways, such as person-person, fecal-oral, and oral-oral transmission, play a role in transmission of *Helicobacter pylori* infection. It can be transferred from mother to infant in either the perinatal or postnatal periods.

**OBJECTIVE:** The aim of this prospective study was to determine the course of *H pylori* infection in mother-infant pairs in early years of life.

**METHODS:** Forty-eight mother-child pairs were followed for 12 months. *H pylori* and hepatitis A virus immunoglobulin G levels were measured in maternal sera, infant sera, and breast-milk samples at birth and in breast-milk samples and infant sera at follow-up visits.

**RESULTS:** At birth, the seropositivity for *H pylori* was 81.25% and hepatitis A was 68.75% in breast milk and 95.8% in maternal and infant sera for both microorganisms. Although there was a decrease in seropositivities for both agents in both infant sera and breast milk at the age of 9 months, an increase was observed in the twelfth month.

**CONCLUSIONS:** High seroprevalence rates of *H pylori* and hepatitis A virus and similar monthly changes in seroprevalence could be indicators of the same transmission routes.

## IMPACT OF ZINC SUPPLEMENTATION ON GROWTH: A DOUBLE-BLIND, RANDOMIZED TRIAL AMONG URBAN IRANIAN SCHOOLCHILDREN

Submitted by Nahid Masoodpoor

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**INTRODUCTION:** The first study that linked zinc and growth was carried out in Iran and Egypt almost 3 decades ago. At the time, the circumstances leading to growth impairment secondary to zinc deficiency were believed to be unique in less developed countries. Multiple studies have been carried out to assess the effect of zinc supplementation on children's growth. The results of these studies have been inconsistent.

**OBJECTIVE:** The aim of this study was to investigate the impact of zinc supplementation on growth (weight and height) among schoolchildren who were underweight or had stunted growth.

**METHODS:** Our study was a randomized, double-blind, placebo-controlled trial of 90 Iranian urban schoolchildren (50 boys and 40 girls; 7–12 years old) who were underweight or stunted and were supplemented with 10 mg of zinc or placebo on school days for 6 months. Variables were weight and height.

**RESULTS:** Significant effects on weight gain ( $2.037 \pm 1.240$  vs  $1.55 \pm 0.64$  kg;  $P = .0167$ ) and height ( $2.030 \pm 1.003$  vs  $1.403 \pm 0.521$  cm;  $P = .0002$ ) in the children after zinc supplementation versus placebo administration, respectively, were seen over the 6-month period.

**CONCLUSIONS:** On the basis of this study, zinc supplementation improved growth in underweight or stunted children and should be considered for populations at risk for zinc deficiency, especially where there are elevated rates of underweight or stunting.

## TEL/AML1+ ACUTE LYMPHOBLASTIC LEUKEMIA IN THE GREEK PEDIATRIC POPULATION

Submitted by Sophia Polychronopoulou

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**INTRODUCTION:** *TEL/AML1*<sup>+</sup> acute lymphoblastic leukemia (ALL) is considered to be a distinct nosological entity with excellent prognosis, but recent studies have indicated significant clinical heterogeneity.

**OBJECTIVE:** In this study, we attempted to estimate the incidence and clinical features of *TEL/AML1*<sup>+</sup> ALL for the first time in a representative cohort of Greek pediatric patients.

**METHODS:** One hundred twenty children (<16 years old) diagnosed with ALL (107 of B-cell origin, 13 of T-cell origin) were screened for *TEL/AML1* with interphase fluorescence in situ hybridization by using a commercial probe set. All patients were treated as either standard risk (SR) or high-risk (HR) cases according to a modified BFM-95 (Berlin-Frenkfurt-Munster) protocol. Follow-up ranged between 5 and 87 months (median: 45 months).

**RESULTS:** Twenty-six patient (all of them will ALL of B-cell origin [24.3%]) were found to be positive for *TEL/AML1*. The presence of *TEL/AML1* was significantly associated with younger age and lower white blood cell count at diagnosis but not with remission duration or overall survival rate. The number of children who relapsed (1 vs 7) or succumbed (1 vs 5) was comparable between the *TEL/AML1*<sup>+</sup> and *TEL/AML1*<sup>-</sup> groups of children with ALL of B-cell origin.

**CONCLUSIONS:** The incidence of *TEL/AML1* in Greece seems comparable to that in other European and Med-

iterranean countries. As in most European studies, the independent prognostic value of *TEL/AML1* is in doubt, because it is closely associated with other favorable factors. In this series, the modification of the therapeutic regimen (ie, omission of the SR arm) may be responsible for the similar outcome in *TEL/AML1*<sup>+</sup> and *TEL/AML1*<sup>-</sup> cases, because it seems to lower the relapse risk for all children with ALL.

### **BEHAVIORAL VARIABLES IN FUNCTIONAL DYSPESIA: THE TYPE A BEHAVIOR PATTERN, SYMPTOMS OCCURRENCE, AND EFFECTIVENESS OF PHARMACOLOGIC TREATMENT IN SCHOOL-AGED CHILDREN**

**Submitted by Igor Radziewicz-Winnicki**

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**INTRODUCTION:** Functional dyspepsia (FD) is the most prevalent type of abdominal pain. Several organic disorders that result in FD have been identified, whereas psychological trials have suggested that patients with functional gastrointestinal disorders may present behavioral disorders simultaneously. Defining the relationship between common personality aspects, type A and/or type B behavioral patterns (TABPs/TBBPs), and coexisting symptoms as well as their change during FD treatment might be helpful in establishing focused therapy strategies, including appropriate psychological interventions.

**OBJECTIVE:** Our goal was to evaluate the grade of TABPs in children with FD and FD subtypes to reveal correlations of behavioral patterns and experienced symptoms and to assess the relationship between analyzed factors and symptom relief during therapy.

**METHODS:** A total of 66 children (aged 11–18 years) were diagnosed with FD following the Rome II criteria. The control group consisted of 86 healthy children who denied recurrent abdominal pain. In all children, severity of 10 dyspeptic symptoms was measured with the FACES Pain Rating Scale and the created visual-analog Dyspepsia Symptoms Questionnaire. Psychological evaluation was carried out by using the Type A/B Behavior Scale for Children and Adolescents (TAB) by Ogińska-Bulik and Juczyński. All patients received typical treatment for 4 weeks. After 8 weeks, children were asked to complete the symptoms questionnaires again.

**RESULTS:** The general TABP pattern was significantly decreased in the FD group compared with the controls ( $P = .0016$ ), especially in boys. Moderate or extreme TABP was diagnosed in 4.2% of the boys with FD in comparison with 29.7% of the male controls; 66.7% of the boys with FD (vs 24.3% of the controls) and 37.2% of the girls with FD (vs 22.5% of the controls) met

criteria for moderate or extreme TBBP. Boys with ulcer-like FD revealed scores lower than those of the controls on total TABP ( $P < .001$ ) and all of the TABP subscales: competition, impatience, sense of time urgency, and hostility. Correlation analysis exposed the positive relationship between total TABP, competition, and hostility with dysmotility-like symptoms. Sense of time urgency and total TABP correlated negatively to the pain. During the therapy observation, hostility was conducive to increasing most of the dyspeptic symptoms ( $P < .037$ ), and competition was related to the nausea release in boys and to aggravation of heartburn and feeling full long after eating in both genders. The sense of time urgency was related to belching intensifying.

**CONCLUSIONS:** The behavioral pattern varied in the FD and control groups. The children with FD were more likely to present a TBBP than TABP, which is strongly restricted, especially in boys with ulcer-like FD.

1. The TBBP constituents are connected to dysmotilities, whereas reduced TABP compounds are more common among pain-suffering patients.
2. Behavioral pattern influences efficacy of FD treatment: behavioral compounds centered on emotions are conducive to increase dysmotilities, whereas behaviors connected with defeating stress situations encourage pain-symptom aggravation.

### **DOES INTRAFAMILIAL SPREAD PLAY A ROLE FOR *HELICOBACTER PYLORI* INFECTION IN CHILDREN?**

**Submitted by Eleftheria Roma**

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**INTRODUCTION:** Acquisition of *Helicobacter pylori* (Hp) infection in children occurs mainly in those under 5 years of age.

**OBJECTIVE:** Our aim was to investigate intrafamilial spread of Hp infection.

**METHODS:** One hundred symptomatic children without previous eradication treatment were investigated by gastroscopy and the <sup>13</sup>C-urea breath test (UBT). All family members of each index patient were investigated by using the UBT. Infected members were estimated according to UBT results, and for those members who were UBT-negative and had recently received eradication therapy after confirmation of infection by endoscopy, the previous positivity was taken into account.

**RESULTS:** Hp infection was identified in 44 (44%) of 100 symptomatic index children. There was no statistical

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