isolated from children with lower respiratory tract disease. The impact of HBoV on childhood persistent wheezing has not been identified.
OBJECTIVE: Our aim was to study the impact of HBoV on childhood persistent wheezing.
METHODS: In this study, a total of 40 tracheal aspirates were obtained by bronchofibroscope from children with persistent wheezing who had been wheezing for at least >4 weeks. HBoV was detected by polymerase chain reaction. A rapid immunofluorescence method was used for diagnosis of respiratory syncytial virus, adenovirus, influenza A and B, and parainfluenza 1, 2, and 3.
RESULTS: In 40 children with persistent wheezing, 13 (32.5%) had DNA sequences that were HBoV-positive. Age of the patients with HBoV-positive infection ranged from 1 month to 2 years. The results of polymerase chain reaction products sequencing proved that these 13 samples were exactly identical to the sequence of HBoV published in GenBank (accession Nos. DQ988934 and DQ457413). Two children with HBoV infection were found to have coinfection with respiratory syncytial virus.
CONCLUSIONS: This study confirmed that HBoV is a common pathogen for children with lower respiratory infection and might particularly be attributed to persistent wheezing. However, more studies should be performed to study the mechanism of HBoV on chronic airway inflammation.

THE CHILDREN IN DISASTERS PROJECT: ADDRESSING THE SPECIAL NEEDS OF CHILDREN IN MAN-MADE AND NATURAL DISASTERS

Submitted by Karen Olness
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INTRODUCTION: Natural and man-made disasters have increased dramatically over the past 15 years. Children are the most vulnerable population in disasters and suffer acute and long-term physical and psychological damage. In 2005, there were 17 million children displaced from their homes as a result of humanitarian emergencies.
OBJECTIVE: The Children in Disasters Project of the Rainbow Center for Global Child Health aims to reduce the traumatic acute and long-term effects of disasters for children by providing training to health professionals and relief workers, both in the United States and around the world, on how to recognize and respond to the special needs of children in disasters.
RESULTS: Since 1996 the project has provided intensive, interactive, 5-day training programs entitled "Management of Complex Humanitarian Emergencies: Focus on Children and Families." These were the first programs to emphasize that children need special attention in disasters. This course has been replicated with colleagues in 9 countries and has trained 980 people to help care for disaster-affected children. Course evaluations have been excellent, and trainees have done well in disaster work.
CONCLUSIONS: Because of ongoing humanitarian emergencies, there is a need to continue training relief workers about the special needs of children.

PROBIOTICS REDUCE INCIDENCE AND DURATION OF RESPIRATORY TRACT INFECTION SYMPTOMS IN 3- TO 5-YEAR-OLD CHILDREN

Submitted by Arthur Ouwehand
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INTRODUCTION: Probiotics are live microorganisms that have a beneficial effect on the host.
OBJECTIVE: Our aim was to investigate whether consumption of probiotics would be able to reduce symptoms of respiratory tract infections during the winter season.
METHODS: Children aged 3 to 5 years were recruited and randomly assigned to 1 of 3 groups to receive placebo (n = 92), *Lactobacillus acidophilus* NCFM (NCFM) ($n = 77$), or a combination of *L acidophilus* NCFM and *Bifidobacterium lactis* Bi-07 (NCFM+Bi-07) ($n = 79$). Probiotics were consumed daily at a dose of 10^{10} colony-forming units for 6 months from November to April. The study was performed in Shanghai, China, and approved by the local authorities.
RESULTS: The incidence of fever was reduced by 63% in the NCFM+Bi-07 group and by 48% in the NCFM group. Cough was reduced by 54% in the NCFM+Bi-07 group and by 42% in the NCFM group. Runny nose was reduced by 44% in the NCFM+Bi-07 group and by 9% in the NCFM group; the latter result was not significant. Antibiotic use was reduced by 80% in the NCFM+Bi-07 group and by 68% in the NCFM group. Children in the placebo group had, on average, 6.5 days with symptoms, those in the NCFM group had 4.5 days with symptoms, and those in the NCFM+Bi-07 group had 3.4 days with symptoms.
CONCLUSIONS: Daily consumption of NCFM and Bi-07 and of NCFM alone significantly reduced the incidence and duration of respiratory tract infection symptoms in children. The combination of the 2 probiotics tended to perform better than the NCFM alone.

PREVALENCE AND INCIDENCE OF A NEWLY DEFINED TYPE OF DIABETES IN CHILDREN, ADOLESCENTS, AND ADULTS IN THE LARGEST INTERNATIONAL SERIES TO DATE

Submitted by Annabelle S. Slingerland

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INTRODUCTION: Recently, interest in "neonatal" diabetes has increased because patients could stop taking insulin and improve glycemic control and associated neurologic features.
OBJECTIVE: Our objective was to determine the anticipated increase in prevalence and incidence of permanent neonatal diabetes in children, adolescents, and adults and investigate the impact of the new definition.
METHODS: We studied 293 (53% male) referrals to the Exeter Laboratory (Devon, United Kingdom) as part of the largest international series to date. The referred patients were diagnosed with diabetes below 6 months of age irrespective of current age, and their conditions had not remitted at the time of study. Data on 27 countries were collected, and age of diagnosis, date of birth, and gender were obtained from standardized forms. All referred patients were tested for *KCNJ11* mutations.
RESULTS: The minimum observed prevalence of the 5 most representative countries was 1.17 (1.01–1.31) per million population, with the estimated true prevalence twice as high. Prevalence was higher for the pediatric versus adult age range (odds ratio: 0.78 [95% confidence interval: 0.54–1.31] vs 0.42 [95% confidence interval: 0–0.50], respectively; $P = .009$). Seventy-five percent of the patients were below 16 years of age with a median (interquartile range) of 5.7 (2.4–10.2) years, which implies underdiagnosis beyond 5 years of age. Age of diagnosis was skewed to a median (interquartile range) of 6 (1–13) weeks, with 62% in the first 8 weeks. During 2000–2004, the minimum observed incidence was 2.95 (0–49.1) per million live births.
CONCLUSIONS: This is the first report to show 2 to 25 times higher prevalence than previous reports from 10 years ago. "Neonatal" should be changed to "diagnosed at <6 months of age irrespective of current age," and awareness should be increased, especially for those who are older than 5 years and present with treatment implications.

Genetics

IDENTIFICATION OF 7 NOVEL TRANSFORMING GROWTH FACTOR β RECEPTOR 2 MUTATIONS IN CHINESE PATIENTS WITH MARFAN SYNDROME

Submitted by Hon Yin Brian Chung

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INTRODUCTION: Marfan syndrome (MFS) (Online Mendelian Inheritance in Man [OMIM] No. 154700) is an autosomal-dominant connective tissue disorder that affects multiple systems including the cardiovascular, ocular, and musculoskeletal systems. Fibrillin 1 (FBN1) (OMIM No. 134797) mutations are causative in >90% of the cases, and recent studies have shown that transforming growth factor β receptor 2 (*TGFBR2*) (OMIM No. 190182) mutations could be identified in ~10% of non-*FBN1* probands (Mátyás G, Arnold E, Carrel T, et al. *Hum Mutat*. 2006;27:760–769).
OBJECTIVE: Our objective was to examine the mutation spectrum of *TGFBR2* in non-*FBN1* Chinese patients with MFS and related phenotypes.
METHODS: All Chinese probands who were referred for evaluation of MFS and tested negative for *FBN1* mutations were included. Mutational screening was performed by denaturing high-pressure liquid chromatography (Kosaki K, Udaka T, Okuyama T. *Mol Genet Metab*. 2005;86:117–123). Amplicons with an abnormal elution pattern were selected for direct sequencing.
RESULTS: Seven novel mutations were identified in 7 of 41 probands. All of them had prominent cardioskeletal phenotypes without ocular or dural involvement, which confirmed previous findings (Disabella E, Grasso M, Marziliano N, et al: *Eur J Hum Genet*. 2006;14;34–38). Six mutations were missense (R190H, D247V, T325P, G357R, I510N, and T530I), and 1 was frameshift (P501fsX17). Except for R190H, all were found in the functionally important kinase domain. Bioinformatic analyses showed that (1) all mutations occurred in conserved positions by cross-species comparison between 6 orthologs, and (2) R190H, T325P, T530I, and G357R were also found in conserved positions among 3 paralogs (*TGFBR1* and activin receptors AVR2A and AVR2B) in the TGFBR superfamily. None of the 7 were found in 50 unaffected individuals (100 normal alleles). With the *TGFBR2* mutations, 4 additional probands would fulfill the diagnostic criteria of MFS.
CONCLUSIONS: *TGFBR2* mutation was identified in 17% of our non-*FBN1* probands. It should be considered in the evaluation for MFS after *FBN1* screening, especially if there are compatible clinical features.

MUTATIONAL ANALYSIS OF *PTPN11* AND *KRAS* GENES IN TAIWANESE CHILDREN WITH NOONAN SYNDROME

Submitted by Fu-Sung Lo

PREVALENCE AND INCIDENCE OF A NEWLY DEFINED TYPE OF DIABETES IN CHILDREN, ADOLESCENTS, AND ADULTS IN THE LARGEST INTERNATIONAL SERIES TO DATE

Annabelle S. Slingerland and Andrew Hattersley

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DOI: 10.1542/peds.2007-2022KKK

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