High Blood Pressure Rates Rise in Children, Teens

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The prevalence of high blood pressure among children and adolescents rose during the late 1980s and into the early 2000s despite a downward trend that prevailed during much of the prior 30 years, according to the results of national surveys conducted during 1963-2002.

From 1988 to 2002, the prevalence of high blood pressure (HBP) in children and adolescents aged 8-17 years increased from 2.7% to 3.7%. During the same period, the prevalence of pre-HBP increased from 7.7% to 10% and rose significantly among blacks and Mexican Americans, Dr. Rebecca Din-Dzietham and her associates at Morehouse School of Medicine, Atlanta, reported.

"It is advisable to measure blood pressure at every visit with the appropriate technique to rank the child's measured blood pressure from the Centers for Disease Control and Prevention growth charts and the gender-, age-, and height-specific blood pressure table" the researchers advised (Circulation 2007;116:1392-1400).

They analyzed data on individuals aged 8-17 years from the second and third National Health Examination Surveys (1963-1965 and 1966-1970, respectively), the Hispanic Health and Nutrition Examination Survey (1982-1984), and the first, second, third, and continuous National Health and Nutrition Examination Surveys (1971-1975, 1976-1980, 1988-1994, and 1999-2002).

The overall trend of systolic and diastolic BP in the surveys paralleled the rise in HBP, although the mean increase in age-adjusted BP was greater for diastolic (8.4 mm Hg) than systolic BP (1.3 mm Hg). The increase in systolic BP was comparable among lean, at-risk-for-overweight, and overweight children and adolescents, but lean individuals had a significantly greater mean increase in diastolic BP than did their heavier counterparts. ■

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To boost the number of patients with PAH who start treatment early, Dr. Galiè suggested screening for PAH in groups that are known to have a relatively high prevalence of PAH. This includes patients with connective tissue diseases, such as scleroderma, patients infected with HIV, and patients with congenital heart disease.

Three other reports at the meeting dealt with using bosentan to treat PAH; all three studies also were sponsored by Actelion.

One study enrolled 157 patients who had a specific, relatively common form of PAH, chronic thromboembolic pulmonary hypertension (CTEPH), which was inoperable or recurrent. The results showed that treatment with bosentan was safe and led to improvements in pulmonary vascular resistance and other measures, Dr. Irene Lang, professor of vascular biology at the Medical University of Vienna, reported at the meeting.

The Bosentan Effects in Inoperable Forms of CTEPH (BENEFIT) study randomized patients to treatment with 62.5 mg bosentan b.i.d for 4 weeks, followed by 125 mg b.i.d. for 12 weeks or placebo. Their average age was 63 years. Bosentan was linked with a significant, 24% reduction in peripheral vascular resistance in 66 evaluable patients, compared with 71 placebo patients. Treatment also significantly boosted cardiac index, and cut NT-proBNP levels and dyspnea scores. Bosentan treatment had no significant effect on 6-minute walk distance.

Another study assessed the acute hemodynamic effect of a single, 25-mg dose of sildenafil in 44 patients with PAH already on chronic bosentan treatment. The results showed that the single sildenafil dose was safe, and after 60 minutes led to a significant drop in pulmonary vascular resistance, total pulmonary resistance, pulmonary artery pressure, and cardiac output.

The fourth study examined the pharmacokinetics of a new formulation of bosentan designed for use in children. Results from 35 patients aged 2-11 years showed that the formulation led to reasonable serum levels and a good safety profile.

"New drugs such as bosentan have dramatically improved outcomes for patients with pulmonary arterial hypertension. It is gratifying to see extension of the research into patients with early disease and in children," commented Dr. Daniel Jones, professor of medicine and dean of the medical school at the University of Mississippi, Jackson, and president of the American Heart Association. ■