American Heart Association rapid access journal report:

Breastfeeding Linked With Lower Childhood Blood Pressure

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DALLAS, March 2 - Breastfed babies have lower blood pressure as children compared to their bottle-fed counterparts, possibly setting the stage for lower blood pressure in adulthood and a reduced risk of coronary death, researchers reported in today’s rapid access issue of Circulation: Journal of the American Heart Association.

Children who were breastfed as infants had 0.8 millimeter of mercury (mm Hg) lower systolic blood pressure at age 7 than did children who were bottle-fed.

The findings are consistent with another study that found that breastfeeding is associated with a reduced risk of coronary disease death. However, other studies failed to show a consistent link between breastfeeding and specific coronary risk factors, such as high cholesterol or high blood pressure.

Lower blood pressure is a potential explanation for the reduced coronary mortality risk, according to the British researchers.

"There is some weak evidence that there is a small lowering of blood pressure in adulthood [among children who were breast fed], but the evidence is inconsistent," said Richard Martin, MSc, MFPH, senior lecturer in epidemiology and public health at the University of Bristol, United Kingdom. "No one has investigated in a prospective study whether the association changes with age."

Martin and his colleagues compared the effects of breast- and bottle-feeding on blood pressure in 4,763 children enrolled in the Avon Longitudinal Study of Parents and Children, a long-term study of health and development in the United Kingdom. The children averaged age 7.5 years old at the time of the study. Researchers
obtained infant feeding data from questionnaires completed by mothers when the children were 6 months and 15 months old.

Researchers categorized infant feeding as “exclusive breastfeeding” if the child received no solids, formula, or other drinks (except vitamins, minerals, medicine, or water) before two months of age; “partial breastfeeding” if exclusive breastfeeding continued for less than two months; and “never breastfed.” They also grouped the children according to total duration of breastfeeding, ranging from “never” to “more than six months.”

In an overall analysis, children who were breastfed for any length of time had lower blood pressure than did formula-fed children. After adjusting for factors that could potentially influence the results (such as mother’s education, socioeconomic status, birth weight, etc.), the investigators found that blood pressure remained lower in breastfed children, averaging 0.8 mm Hg lower for systolic pressure (the first number in a blood pressure reading) and 0.6 mm Hg for lower diastolic pressure (the second number).

“Even this small reduction may have important population-health implications,” he said. “A one-percent reduction in population systolic blood pressure levels is associated with about a 1.5 percent reduction in all-cause mortality, equivalent to a lessening in premature death of about 8,000 to 20,000 deaths per year in the United States and the United Kingdom, respectively.”

The association between breastfeeding and blood pressure was not affected by a child’s gender, body mass, or pulse. Moreover, family social status, income, number of siblings, maternal alcohol consumption, the child’s health, and the child’s ethnicity did not change the association between breastfeeding and blood pressure.

The modest beneficial effect of breastfeeding on blood pressure was similar regardless of whether the child had partial or exclusive breastfeeding up to two months old. However, the blood pressure effect was greatest among children who had been breastfed for at least six months. After adjusting for confounding factors, every three months of breastfeeding was associated with a statistically significant 0.2 mm Hg reduction in systolic blood pressure. Breastfeeding time didn’t significantly affect diastolic blood pressure.

Differences in the nutrient content of breast milk and formula are a potential explanation for the blood pressure-lowering effect of breastfeeding, Martin said. Breastfed children tend to consume less sodium, which is one factor that can influence blood pressure. Breast milk also contains long-chain polyunsaturated fatty acids...
(LCPUFAs), which impact tissue development in the body, including blood vessels. Infant formula supplemented with LCPUFAs also has been associated with lower blood pressure.

Formula feeding is more likely to lead to overfeeding and overweight babies. Excess weight is also associated with higher blood pressures and promotes insulin resistance, which often precedes development of diabetes in adulthood. Breastfeeding may protect against future overweight, Martin said.

The researchers said they plan to conduct similar studies in other large groups of children in an effort to confirm the findings. They also plan to organize studies to evaluate the effects of programs to promote breastfeeding.

Co-authors are Andrew R. Ness, Ph.D.; David Gunnell, Ph.D.; Pauline Emmett, Ph.D; and George Davey Smith, M.D., for the ALSPAC Study Team.

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