

Commentary Review ~ Bacterial Infections and SIDS
by Dr. Thomas G. Keens
June 5, 2008

This commentary written by Dr. Thomas G. Keens is in response to a research article, recently highlighted in the news, about bacterial infections in babies who died from SIDS. The reference is: Weber, M.A., N.J. Klein, J.C. Hartley, P.E. Lock, M. Malone, and N.J. Sebire. *Infection and sudden unexpected death in infancy: a systematic retrospective case review. Lancet, 371: 1848-1853, 2008.*

The investigators reviewed bacterial cultures taken at autopsy from 470 babies who died suddenly in the U.K. The study had the advantage that all autopsies were performed by pediatric pathologists, and a standard autopsy protocol was used to determine the cause of death. Infants were subsequently divided into three groups: (1) Unexplained deaths. (2) Explained with histological evidence of infection (i.e., pneumonia, meningitis, etc.). and (3) Explained by non-infectious causes (trauma, etc.). There was a very high rate of finding positive bacterial cultures in all groups of babies, even those who died from non-infectious causes. The investigators further divided the bacterial results into three groups: (1) Those bacteria known not to be associated with disease (non-pathological). (2) Those bacteria associated with disease and/or death, but with histological evidence of infection and (3) Those bacteria which could be associated with disease or death in the absence of obvious histological evidence. This latter type of bacteria may be the most important if one thinks that bacterial infection causes SIDS. For this latter type of bacteria, 24% of babies in the explained group due to infections had positive cultures. 19% of the babies in the unexplained category had positive cultures. But only 11% of those babies in the explained due to non-infectious causes group were positive. This was a statistically significant difference. The most common organisms cultured from this group were *Staphylococcus aureus* and *Escherichia coli*. Those babies with positive cultures tended to be older than those with negative cultures.

It is interesting to note that there is a relatively high incidence of positive bacterial cultures in all groups. However, the incidence is higher in those believed to have died from infection and in the unexplained group. Even in the group thought to have died from infection, only 24% of babies grew positive cultures of the bacteria which we should most worry about. I do not think this article represents a "breakthrough", as was suggested by the media. Infections have been considered as possible causes or contributors to the cause of death in SIDS infants for many years. There may well be some mechanisms of infections perturbing autonomic nervous system dysfunction, inflammatory reactions, or others, which remain to be elucidated, and which may ultimately prove to contribute to the cause of SIDS. However, I think it would be premature to suggest that SIDS is due to bacterial infection based on this study. Of course, the cause of SIDS is not known. Therefore, any research which sheds light on possible causes, mechanisms, or contributors should be encouraged. This study is no exception, but I don't think it can yet be considered to be the answer.

*Written by: Thomas G. Keens, MD, Professor of Pediatrics, Physiology and Biophysics
Division of Pediatric Pulmonology
Childrens Hospital Los Angeles
4650 Sunset Boulevard, Box 83
Los Angeles, CA 90027-6062
(323) 361-2101 ✧ (323) 361-1355 (FAX) ✧ Email: tkeens@chla.usc.edu*



Produced by the California SIDS Program under funding
by the California Department of Public Health
Maternal, Child and Adolescent Health Program © 2008

California Sudden Infant Death Syndrome Program
800-369-SIDS (7437) ✧ www.californiasids.com