

News

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****UT Southwestern researcher reports on new
meningitis treatment in New England Journal

DALLAS -- Researchers at The University of Texas Southwestern Medical Center believe that a new treatment for children with bacterial meningitis can reduce the severity of both the disease and its outcome.

The study, published in the Oct. 13 New England Journal of Medicine, compares the use of conventional antibiotic therapy plus dexamethasone, an anti-inflammatory steroid, to the use of antibiotics alone. Dr. George H. McCracken Jr., senior author of the article, is professor of pediatrics at UT Southwestern and co-director of the Pediatric Infectious Disease Division at the university. The study was done at Children's Medical Center and Parkland Memorial Hospital in Dallas.

Bacterial meningitis afflicts an estimated 15,000 infants and children each year in this country alone. From 5 to 10 percent of the stricken children die, and as many as 25 to 50 percent of the survivors develop long-term side effects, the most common being hearing loss.

"In recent years, the use of newer antimicrobial agents that have superior killing activity against the organisms causing meningitis has not produced tangible reductions in morbidity and case-fatality rates," McCracken said. "Clearly, if advances are to be made in improving outcome from this disease, alternative approaches to treatment must be explored."

According to the Journal article, the use of dexamethasone-- a corticosteroid with anti-inflammatory activity--along with antibiotics for the first four days of treatment led to significantly improved results over standard treatment with antimicrobials alone. The greatest benefit was the reduction in hearing loss. The steroid-treated patients had a significantly lower incidence of hearing loss in one or both ears. When hearing loss was present, there were fewer patients who developed moderate-to-profound loss in the steroid-treated group. Only one child treated with dexamethasone required a hearing aid after recovery while 12 of the children who received placebo doses needed them.

Other gains included fewer patient-days with fever and reduced inflammation as measured by cerebrospinal fluid examination. Reduced inflammation in the central nervous system may explain, in part, the improved outcome in steroid-treated children, McCracken said.

Two hundred infants and children with bacterial meningitis were enrolled in two double-blind randomized trials conducted at Children's and Parkland in Dallas from May 1984 to August 1987. Antibiotic therapy was given to 102 patients for 10 days with supplemental doses of dexamethasone for the first four days. Ninety -

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eight patients received antibiotic therapy for 10 days and placebo doses for four days instead of the dexamethasone. The dexamethasone and placebo treatments were given intravenously.

In addition, McCracken and co-workers have completed a third Dallas-based study with dexamethasone that was similar to the earlier projects. The results confirm their previous findings reported in the Journal. A fourth study is currently being conducted at the National Children's Hospital in San Jose, Costa Rica, in collaboration with Dr. Carla Odio.

Other meningitis studies currently in progress in McCracken's labs include investigation of the mechanisms of meningitis using molecular biologic techniques. He and his associates hope to determine the causes of inflammation and how dexamethasone inhibits this process. Working with him in these studies are Dr. Eric Hansen in the Department of Microbiology and Dr. Bruce Beutler, an investigator at the Howard Hughes Medical Institute on the UT Southwestern campus.

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Note: The University of Texas Southwestern Medical Center at Dallas comprises Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences and Southwestern Allied Health Sciences School.