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Change in prevalence of meningitis among children with febrile seizure after the pentavalent vaccination

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Introduction: One of the most significant current discussions in pediatrics is that should lumbar puncture (LP) be performed in children with FS as in the past.

Objectives: We compared the prevalence of meningitis among FS children before and after the pentavalent vaccine to determine the importance of the LP in these children

Methods: We performed a retrospective cross-sectional study on the prevalence and etiology of bacterial meningitis (BM) in 1314 children with febrile seizure (FS) before and after pentavalent vaccination.

Results: We found that complex FS was more prevalent in patients aged under 12 months compared to other patients. The peak incidence of aseptic meningitis and BM was in the age group of 12- to 18- month- and 18- to 36-month-old, respectively (P value <0.001 and <0.05, respectively). Children with complex FS had a significantly higher rate of BM and a lower rate of seizure recurrence than those with simple FS (P value < 0.05). There was a significant relationship between getting the pentavalent vaccine and reducing the prevalence of BM and Hib-induced BM, but no SP-induced BM (P value <0.05 and 0.05 and 0.104, respectively). **Conclusion:** This study offers some insights into the effectiveness of the pentavalent vaccine. In addition, the low prevalence of BM in vaccinated FS cases does not support strong recommendations to LP in FS children.

Recent publications

1. Syrian females with congenital adrenal hyperplasia: a case series. *Journal of Medical Case Reports* 16 (1), 1-6
2. Frequency of the Point Mutation R356W in a Group of Syrian Patients With Congenital Adrenocortical Hyperplasia, 38(1), 2022.

Biography

Brandon Lucke-Wold was born and raised in Colorado Springs, CO. He graduated magna cum laude with a BS in Neuroscience and distinction in honors from Baylor University. He completed his MD/PhD, Master's in Clinical and Translational Research, and the Global Health Track at West Virginia University School of Medicine. His research focus was on traumatic brain injury, neurosurgical simulation, and stroke. At West Virginia University, he also served as a health coach for the Diabetes Prevention and Management program in Morgantown and Charleston, WV, which significantly improved health outcomes for participants. In addition to his research and public health projects, he is a co-founder of the biotechnology company Wright-Wold Scientific, the pharmaceutical company CTE cure, and was a science advocate on Capitol Hill through the Washington Fellow's program. He has also served as president of the WVU chapters for the American Association of Pharmaceutical Scientists, Neurosurgery Interest group, and Erlenmeyer Initiative Entrepreneur group. In addition, he has served as vice president for the graduate student neuroscience interest group, Nu Rho Psi Honor Society, and medical students for global health. He was an active member of the Gold Humanism Honor Society and Alpha Omega Alpha Honor Society. He is currently a member of the Young Neurosurgeons' Committee. He is married to Noelle Lucke-Wold, and has a toddler daughter named Esme. As a family, they enjoy running with their dogs, rock climbing, and traveling the world. In his spare time, Brandon frequently runs half marathons and 10ks together with his wife. Brandon also enjoys reading and discussing philosophy and playing chess. He is excited to join the neurosurgery residency program at University of Florida.

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