

## **INFECTION FOLLOWING EXTERNAL VENTRICULAR DRAIN INSERTION IN THE REPUBLIC OF IRELAND: A RETROSPECTIVE AUDIT**

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**Background:** The Irish national paediatric neurosurgical service was established in 2008. A retrospective audit of infection arising following external ventricular drain (EVD) insertions, 2008 - 2009, inclusive, was conducted.

**Methods:** A standardised data collection form was completed for each procedure. US Centers for Disease Control and Prevention (CDC) definitions of surgical site infection (SSI) were utilised.

**Results:** Thirty-nine children (22 males) underwent 59 EVD insertion procedures, all impregnated with clindamycin and rifampicin. Twenty-one (35%) EVD insertions were because of suspected infection of an existing CSF shunt or EVD. On admission, 22 (56%) children were ≤ 1 year old and 22 (56%) weighed ≤ 10kg. Post-neurosurgical infection occurred following eight (14%) procedures. Eight episodes of meningitis occurred, of which five were culture-positive: Coagulase-negative staphylococci (2), *E. coli* (1), *C. albicans* (1) and one polymicrobial infection (*Enterococcus faecalis* and *Citrobacter freundii*). One child had three episodes of EVD meningitis. Gram-stain was not helpful in guiding empiric antimicrobial therapy as organisms were not seen on any of the eight CSF Gram stains. No episodes of superficial or deep incisional SSI were recorded. The average length of stay for EVD insertion complicated by infection was 44 days versus 24 days without. No infection-related deaths were recorded.

**Conclusions:** Despite the use of antimicrobial-impregnated catheters, EVD infection remains an important cause of prolonged hospital stay. The heterogeneity of microorganism isolated complicates selection of empiric therapy and highlights the continued need to adopt a multifaceted approach to infection prevention in paediatric patients.