A perioperative evidence based protocol can reduce the infection rate in cerebrospinal fluid shunt procedures:

**Background:** Shunt infection markedly impairs the clinical result of shunt surgery. The infection rate can be reduced by dedicated protocols.

**Objective:** This study was undertaken to determine the efficacy of introducing an evidence-based perioperative protocol for control of shunt infections.

**Methods:** The shunt infection rate and risk factors for shunt infection were determined for two periods, namely the period 2001-2002 (Patient Material A), and the period 2005-2008 (Patient Material B). An evidence-based protocol was introduced in 2005 before the second period.

**Results:** The total patient material includes 901 patients in whom 1404 shunt procedures were performed during the study periods. The only significant change in protocol between the two time periods was that the preoperative wash with 4% chlorhexidine gluconate (Hibiscrub®) also was done in the children below 1 year of age. While the overall infection rate dropped non-significantly from 6.5 to 4.3%, infection rate dropped markedly and significantly among the children younger than 1 year from 18.4% to 5.7%. The significant risk factors for shunt infection were in Patient Material A age below 1 year (p=.044), and in Patient Material B premature birth (p=.045), postoperative CSF leakage (p<.001), high ASA score (p=.018) and the lack of preoperative wash with Hibiscrub® (p=.037).

**Conclusions:** This study showed that implementation of a perioperative protocol including preoperative wash with 4% chlorhexidine gluconate (Hibiscrub®), markedly and significantly reduced shunt infection rate in children younger than 1 year, even though no significant overall reduction in shunt infection rate was found.