

External cerebrospinal fluid drainage

see [External lumbar cerebrospinal fluid drainage](#).

see [External ventricular drainage](#).

A [prospective observational study](#) was conducted in the Neurosurgical Department of our hospital between 2014 and 2017. We included all consecutive patients undergoing CSF catheter insertions, including external ventricular drainage (EVD), lumbar drainage (LD), and ICP catheters. An [infection control \(IC\) intervention](#) was implemented between March and August 2016. We examined risk factors for [meningitis](#) or [ventriculitis](#), defined according to Healthcare-associated infections surveillance definitions, on univariate and multivariate analysis.

Results: A total of 232 patients with 437 drains (212 EVDs, 92 LDs, and 133 ICPs) were included. On univariate and multivariate analysis, the infection incidence was 13.7 per 1000 drain days (17.3/1000 before IC intervention, 7.9/1000 during, and 9.2/1000 after the intervention). Most episodes were caused by Gram-negative bacteria, and the most common pathogen was *Acinetobacter baumannii*. Risk factors for infection per patient included diabetes mellitus ($p = 0.017$), Cerebrospinal fluid fistula ($p = 0.032$), drain opening ($p = 0.027$), and the duration of the drain in days ($p = 0.035$). Risk factors per catheter included drain opening ($p < 0.001$), drain days ($p = 0.001$), and the IC intervention period compared to before the intervention period ($p = 0.037$). When restricting the analysis to EVDs, drain days ($p = 0.001$) was the only significant risk factor.

Strict adherence to IC, shortening drain duration, and avoiding unnecessary opening and manipulation of the drains are crucial to preventing neurosurgical drain infections ¹⁾.

¹⁾

Hussein K, Rabino G, Feder O, Eghbaryeh H, Zayyad H, Sviri G, Benenson R, Paul M. Risk factors for meningitis in neurosurgical patients with cerebrospinal fluid drains: prospective observational cohort study. *Acta Neurochir (Wien)*. 2019 Mar;161(3):517-524. doi: 10.1007/s00701-019-03801-y. Epub 2019 Jan 22. PMID: 30666453.

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