

Maryam Alarayedh  
Ola Alhalwachi

## **Efficacy and Safety of Adjunctive Dexamethasone Therapy in Adolescents and Adults with Bacterial Meningitis: A Systematic Review of Randomized Controlled Trials**

### **Abstract**

**Background:** Controversy around Dexamethasone use in the therapeutic regimen of bacterial meningitis has been a long-standing topic of interest. Conflicting results from multiple studies have made it difficult to determine the exact benefit of this practice.

**Methods:** Several online databases (PubMed Central, ScienceDirect, Google Scholar, Wiley Online Library, Academic Search Ultimate, Medline, CINAHL, JAMA Network, and BMJ journal) were searched for RCTs of Dexamethasone use in adolescents and adults with bacterial meningitis published between 1991-2021. The studies' methodological quality was assessed using the Joanna Briggs Institute assessment tool to ascertain data rigour and trial reliability.

**Results:** A total of 7 trials including 1438 bacterial meningitis patients (721 Dexamethasone group, 717 control group) were included in our systematic review. Our results established that Dexamethasone was associated with a reduction in mortality. However, three studies had a lower mortality in their Dexamethasone group but did not reach statistical significance. Moreover, there was no beneficial effect on neurological sequelae and inconclusive results in hearing loss.

**Conclusion:** Dexamethasone use in conjugation with antimicrobials proves to reduce the risk of mortality. However, there is no significant beneficial effect on neurological sequelae and an undetermined effect on hearing loss. More trials with larger sample sizes are needed to investigate the efficacy of this treatment in adolescents and adults.