Cellulitis in Children

Abstract
Children who require intravenous antibiotics for cellulitis are typically admitted to the hospital, whereas adults typically receive intravenous antibiotics at home. This is a Randomised Controlled Study (RCS) comparing the delivery of ceftriaxone at home against usual care of flucloxacillin in the hospital for the treatment of cellulitis in children. The goal of the study is to compare:

- The rate of treatment failure at home versus in the hospital
- The safety of treatment at home versus in the hospital
- The effect of short-course ceftriaxone versus flucloxacillin exposure on nasal and gut microorganism resistance patterns, as well as the clinical implications.

Introduction
Children with cellulitis who require intravenous antibiotics are typically admitted to the hospital, whereas adults frequently receive intravenous antibiotics at home. Parental concern and the acute nature of the infection in youngsters have been cited as some of the explanations. Children treated at home, on the other hand, fare better psychologically and physically, have fewer investigations, are at lower risk of hospital-acquired illnesses, and require fewer healthcare resources as a result of their treatment. Children with moderate to severe cellulitis can be treated successfully at home, but the criteria are unclear. In children with cellulitis, there are no randomised trials comparing home versus hospital care. Due to severe, fast spreading, or difficult cellulitis or worsening characteristics despite oral medicines, 57% of children presenting with cellulitis to the Emergency Department (ED) were discharged on oral antibiotics versus hospital care. The majority of paediatric OPAT services are only able to deliver once daily interventions. Ceftriaxone is an antistaphylococcal antibiotic that can be taken once a day. Only a few trials in children have used ceftriaxone to treat cellulitis in the hospital or during OPAT, but none have compared outcomes to children treated with other antibiotics. There have been no studies comparing home and hospital administration in children with cellulitis who require intravenous treatment. There was an 80% success rate in a trial of children with moderate/severe cellulitis who were treated with ceftriaxone in a day treatment centre, but no comparison was made with children treated in hospitals. Other studies that used ceftriaxone to treat cellulitis in children reported cure rates of 91%-96%, but they had limited sample sizes, no comparison group, and/or unclear methodology. Ceftriaxone and flucloxacillin were tested in a short research in adults, and while ceftriaxone had a greater success rate than flucloxacillin (96% versus 70%), the difference was not statistically significant. Ceftriaxone and flucloxacillin have diverse effects on the microbiome of children, which has never been studied before. The safety of treatment at home versus in the hospital is uncertain.
The effect of short-course ceftriaxone versus flucloxacillin exposure on nasal and gut microorganism resistance patterns, as well as the clinical implications of these differences.

References


Treatment failure, defined as a change in treatment due to a lack of clinical improvement or the emergence of adverse events, is the primary outcome.