CORTICOSTEROIDS FOR SEPTIC ARTHRITIS IN CHILDREN

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Background:

Septic arthritis is an acute infection of the joints characterized by the erosive disruption of the articular space. It is the most common non-degenerative articular disease in developing countries. The most vulnerable population for septic arthritis is comprised of infants and pre-scholars, especially boys. Septic arthritis also disproportionally affects populations with low socio-economic status. Systemic corticosteroids and antibiotic therapy may be beneficial to treat septic arthritis. In septic arthritis, even if the joint infection is eradicated by the antibiotic treatment, the inflammatory process produces residual joint damage and sequelae.

Objectives:

To determine the benefits and harms of corticosteroids as an adjunctive therapy in children with a diagnosis of septic arthritis.

Search methods:

We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE (1966 to November 2016), Embase (1974 to November 2016), Google Scholar (November 2016) and LILACS (1982 to November 2016). We also conducted a search of ClinicalTrials.gov (www.ClinicalTrials.gov) and the WHO trials portal (www.who.int/ictrp/en/). No language restrictions were applied to the search strategies.

Selection criteria:

We included randomized controlled trials (RCTs) with patients aged 2 months to 18 years old diagnosed with septic arthritis, receiving corticosteroids in addition to antibiotic therapy or as adjuvant of other therapies as surgical drainage, intra-articular puncture, arthroscopic irrigation or debridement.

Data collection and analysis:

Two review authors independently assessed eligibility and trial quality, performed data extraction and evaluated data accuracy. We assessed the evidence using GRADE (Grading of Recommendations Assessment, Development and Evaluation) and we created a 'Summary of Findings' table.

Main results:

We included two RCTs involving 149 children. The studies were performed in Costa Rica and Israel. The comparator was placebo in both studies. The longest follow-up was one year. Trials did not report the following outcomes: activities of daily living, length of hospital stay and total or serious adverse events of the intervention. Both studies had an adequate randomization process but the number of loss to follow-up was substantive important.

The number of days until pain free were 3.58 days lower with corticosteroids with a mean difference (MD of -3.58) [95% CI -8.72 to 1.56]. There was moderate quality of the evidence due to concerns about attrition bias, selective reporting and imprecision.

Our prespecified outcome "number of participants with normal physical joint function" was not reported in the included studies so we report on the following similar outcomes: number of days until normal function of the joint and residual dysfunction (reported as dichotomous outcome and described as reduction in angles of articular movements). The number of days until normal function of the joint favoured corticosteroids compared to placebo (MD -2.07 days) [95% CI -5.47 to -1.33]. There was moderate quality of the evidence due to concerns about attrition bias, selective reporting and imprecision. Residual dysfunction at the end of treatment was reduced by corticosteroids at 12 months (long-term) (RR 0.08) [95% CI 0.01 to 0.57]. There was moderate quality of the evidence for this outcome due to attrition bias and imprecision.

We found a reduction in the number of days of intravenous antibiotic treatment favouring corticosteroids (MD -2.77) [95% CI -4.16 to -1.39]; two trials, 149 participants. There was moderate quality of the evidence due to concerns about attrition bias, selective reporting and imprecision.

CORTICOSTEROIDS COMPARED TO PLACEBO FOR SEPTIC ARTHRITIS IN CHILDREN

Patient or population: Septic arthritis in children **Intervention:** Corticosteroids
Setting: Hospitalized children **Comparison:** Placebo

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with Placebo	Risk with Corticosteroids				
Pain measured by different scales - Number of days until pain free	The mean pain measured by different scales - Number of days until pain free was 10.76 days	MD 3.58 days lower (-8.72 lower to 1.56 higher)		49 (1 RCT)	⊕⊕⊕◯ MODERATE	
Activities of daily living				(0 studies)		The outcome was not reported in any of included trials
Number of participants with normal physical joint function - Number of days until normal function of the joint	The mean number of participants with normal physical joint function - Number of days until normal function of the joint was 8.71 days	MD 2.07 days lower (-5.47 lower to 1.33 higher)		49 (1 RCT)	⊕⊕⊕◯ MODERATE	
Number of participants with normal physical joint function - Residual dysfunction at 12 months of follow up (Long-term)	Study population		RR 0.08 (0.01 to 0.57)	100 (1 RCT)	⊕⊕⊕◯ MODERATE	NNTB 5 (CI 95% 4 to 9)
	26 per 100	2 per 100 (0 to 15)				
Serious adverse events				(0 studies)		The outcome was not reported in any of included trials
Number of days of antibiotic treatment - Number of days of intravenous antibiotic treatment	The mean number of days of antibiotic treatment - Number of days of intravenous antibiotic treatment was 10.86 days	MD 2.77 days lower (-4.16 lower to -1.39 higher)		149 (2 RCTs)	⊕⊕⊕◯ MODERATE	
Length of hospital stay				(0 studies)		The outcome was not reported in any of included trials

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and **the relative effect** of the intervention (and its 95% CI).
CI: Confidence interval; RR: Risk ratio; OR: Odds ratio;

GRADE Working Group grades of evidence
High quality: We are very confident that the true effect lies close to that of the estimate of the effect
Moderate quality: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
Low quality: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect
Very low quality: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

Authors' conclusions:

The evidence of corticosteroids as an adjunctive therapy in children with a diagnosis of septic arthritis was limited by the few clinical trials found. Trials included did not present relevant outcomes for the patient as daily activity of the child and adverse events. The studies had limitations in quality. There were limited evidence favouring corticosteroids about a reduction of residual dysfunction of the joint and the number of days of antibiotic treatment. Further randomized clinical trials in children with relevant outcomes are required.

Referencias:

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