

Effectiveness and safety of superficial bacterial skin infections treatment with topical antibiotic in neonates (children)

QUESTION
Can neonates with superficial bacterial skin infections be safely treated with mupirocin compared with other topical antibiotics or oral antibiotics?

CONTEXT	Superficial bacterial skin infections in neonates
Impetigo is the most common bacterial skin infection among children. Staphylococcus aureus is the most important causative organism either alone or in combination with Streptococcus pyogenes (i.e., group A beta-hemolytic streptococcus). Infection can spread easily by direct contact or by fomites. Based on its clinical presentation, impetigo can be classified as bullous and non bullous. Nonbullous impetigo accounts for approximately 70 percent of cases. Culture is not required for the diagnosis although is recommended when methicillin-resistant S. aureus outbreak is suspected.	

INTERVENTION	Treatment with topical antibiotics
Cure/improvement	Topical antibiotics are effective for the treatment of impetigo in neonates. <i>Low quality evidence</i> Fusidic acid and mupirocin are probably equally effective. <i>Moderate quality evidence</i>
Adverse effects	It seems that most adverse events associated to topical mupirocin are local and of mild intensity. <i>Very low quality evidence</i>

Evidence summary	
Benefits	A Cochrane systematic review (SR) was identified (search date:2002) [1] that assessed the effects of antibiotic treatments for impetigo on a wide group of patients, including children and adults. Analysis of cure or improvement showed that topical antibiotics are more effective than placebo (5 RCT; 101 events; RR 6.49, IC95% 3.93 to 10.73), but no significant differences were found between topical mupirocin and fusidic acid, (4 RCT; 199 events; RR 1.22, IC95% 0.69 to 2.16)
Risk - Harms	The trials included in this SR reported few, if any, side effects from topical antibiotics and it was not possible to obtain a common estimate. Data from mupirocin technical information describes burning sensation in the application site as a frequent adverse reaction, whereas itching, redness or dryness in the area of application are described as less frequent reactions [2].
Aplicability	Use of mupirocine or fusidic acid should be based on antibiogram results when available or when methicillin-resistant <i>S. aureus</i> is suspected.
Comentary	Most of the studies included in the SR suffer from a variety of drawbacks. Only a subset of them were carried out exclusively in children and many studies were performed in a population with a myriad of infectious skin disorders including impetigo. Even though this limitations, the evidence supports the use of topical antibiotics such as mupirocin or fusidic acid.
Cost studies	No studies comparing cost between different treatment options were found.

1. Koning S, Verhagen AP, van Suijlekom-Smit LWA, Morris AD, Butler C, van der Wouden JC. Interventions for impetigo. *Cochrane Database of Systematic Reviews* 2003, Issue 2. Art. No.: CD003261. DOI: 10.1002/14651858.CD003261.pub2.
2. Drug information online center. Spanish Agency for Medicines and Health Products. Date of access: June, 28 2011.
<https://sinaem4.agemed.es/consaem/especialidad.do?metodo=verFichaWordPdf&codigo=58868&formato=pdf&formulario=FICHAS>

TABLE		GRADE Evaluation of Clinical Outcomes							
Number of Studies (N)	Outcome	Comparison	Type of Evidence	Quality	Consistency	Direct Evidence	Size of Effect	GRADE	Comments
5/365	Cure/improvement	Topical antibiotics placebo	4	-1	0	-1	-1	Low	Methodological limitations in four studies. Indirectness due to spectrum of interventions and population. Low number of events. Large effect estimate.
4/440	Cure/improvement	Mupirocin Acid fusidic	4	0	0	-1	-1	Moderate	Indirectness due to different populations. Large confident interval.

Type of evidence: 4 = RCT; 2 = Observational studies; 1 = Non-analytic studies / Expert opinion