Systemic Antibiotics for the Treatment of Skin and Soft Tissue Abscesses: A Systematic Review and Meta-Analysis

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The addition of antibiotics to standard incision and drainage is controversial, with earlier studies demonstrating no significant benefit. However, 2 large, multicenter trials have recently been published that challenged the previous have literature. The goal of this review was determine whether to systemic antibiotics for abscesses after incision and drainage improve cure rates.

Study objective

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Study	Study Population	Study Location	Median Age (IQR), Years	No. of Male Patients (%)	Antibiotic
Schmitz, 2010 ¹⁰	212	ED	27 (21-38)	140 (66.0)	TMP-SMX 320–1,600 mg PO twice daily for 7 days
Duong, 2010 ¹¹	161	ED	4 (1-12)	62 (41.6)	TMP-SMX 5-6 mg of TMP/kg PO twice daily for 10 days
Talan, 2016 ¹²	1,247	ED	35 (26-48)	726 (58.2)	TMP-SMX 320-1,600 mg PO twice daily for 7 days
Daum, 2017 ¹³	786	Outpatient	25.5*	448 (57.0)	Adult patients
		clinic or ED			Clindamycin 300 mg PO 3 times daily for 10 days
					TMP-SMX 160-800 mg PO twice daily for 10 days
					Pediatric patients
					Clindamycin 8-10 mg/kg PO 3 times daily for 10 days
					TMP-SMX 4-5 mg of TMP/kg PO twice daily for 10 days
<i>IQR</i> , Interquartile ratio *Mean age.	; TMP-SMX, trimeth	noprim-sulfamethoxaz	ole; PO, per os.		

Table 1. Characteristics of the included studies.

Systemic Antibiotics for the Treatment of Skin and Soft Tissue Abscesses

7	Antibi	otic	Placeb	0		Risk Difference	Risk Difference
Study or St					Weight	M-H, Random, 95% CI Year	M-H, Random, 95% CI
Schmitz 201	10 73	88	75	102	12.0%	0.09 [-0.02, 0.21] 2010	
Duong 2010	70	73	72	76	23.7%	0.01 [-0.06, 0.08] 2010	
Talan 2016	487	524	457	533	36.7%	0.07 [0.04, 0.11] 2016	
Daum 2017	436	470	177	220	27.6%	0.12 [0.07, 0.18] 2017	
Total (95%	CI)	1155		931	100.0%	0.07 [0.03, 0.12]	•
Total events	1066		781				
Heterogene	ity: Tau ² = 0.00; Chi ²	² = 6.70,	df = 3 (P	= 0.08); I ² = 55%		-0.2 -0.1 0 0.1 0.2
Test for ove	rall effect: Z = 3.14 (P = 0.00	02)				Favors [Placebo] Favors [Antibiotic]
							ratere [racese] ratere [rateseal]
3	Antib	iotic	Place	bo		Odds Ratio	Odds Ratio
Study or S		iotic Total			Weight		Odds Ratio M-H, Fixed, 95% Cl
1 NIMES 100 1991	ubgroup Events	Total	Events		and the second sec		
Study or S	ubgroup Events 10 73	Total 88	Events 75	Total	18.5%	M-H, Fixed, 95% CI Year	
Schmitz 20	ubgroup Events 10 73 0 70	5 Total 88 73	Events 75 72	Total 102	18.5% 4.5%	M-H, Fixed, 95% CI Year 1.75 [0.86, 3.56] 2010	
Schmitz 20 Duong 2010	ubgroup Events 10 73 0 70 487	5 Total 88 73 524	Events 75 72 457	Total 102 76	18.5% 4.5% 49.9%	M-H, Fixed, 95% Cl Year 1.75 [0.86, 3.56] 2010 1.30 [0.28, 6.00] 2010	
Study or S Schmitz 20 Duong 2010 Talan 2016	ubgroup Events 10 73 0 70 487 436	5 Total 88 73 524	Events 75 72 457	Total 102 76 533	18.5% 4.5% 49.9% 27.2%	M-H, Fixed, 95% Cl Year 1.75 [0.86, 3.56] 2010 1.30 [0.28, 6.00] 2010 2.19 [1.45, 3.31] 2016 3.12 [1.92, 5.05] 2017	
Study or S Schmitz 20 Duong 2010 Talan 2016 Daum 2017	ubgroup Events 10 73 0 70 487 436 CI)	Total 88 73 524 470 1155	Events 75 72 457	Total 102 76 533 220	18.5% 4.5% 49.9% 27.2%	M-H, Fixed, 95% Cl Year 1.75 [0.86, 3.56] 2010 1.30 [0.28, 6.00] 2010 2.19 [1.45, 3.31] 2016 3.12 [1.92, 5.05] 2017	
Study or S Schmitz 20 Duong 2010 Talan 2016 Daum 2017 Total (95% Total events	ubgroup Events 10 73 0 70 487 436 CI)	Total 88 73 524 470 1155	Events 75 72 457 177 781	Total 102 76 533 220 931	18.5% 4.5% 49.9% 27.2%	M-H, Fixed, 95% CI Year 1.75 [0.86, 3.56] 2010 1.30 [0.28, 6.00] 2010 2.19 [1.45, 3.31] 2016 3.12 [1.92, 5.05] 2017 2.32 [1.75, 3.08]	

Figure 2. Forest diagram of risk difference (*A*) and odds ratio (*B*) demonstrating an increased clinical cure rate in the antibiotic group compared with the placebo group.

The use of systemic antibiotics for skin and soft tissue abscesses after incision and drainage resulted in an increased rate of clinical cure. Providers should consider the use of antibiotics while balancing the risk of adverse events. [Ann Emerg Med. 2018;-:1-9.]

Please see page XX for the Editor's Capsule Summary of this article.

Conclusion