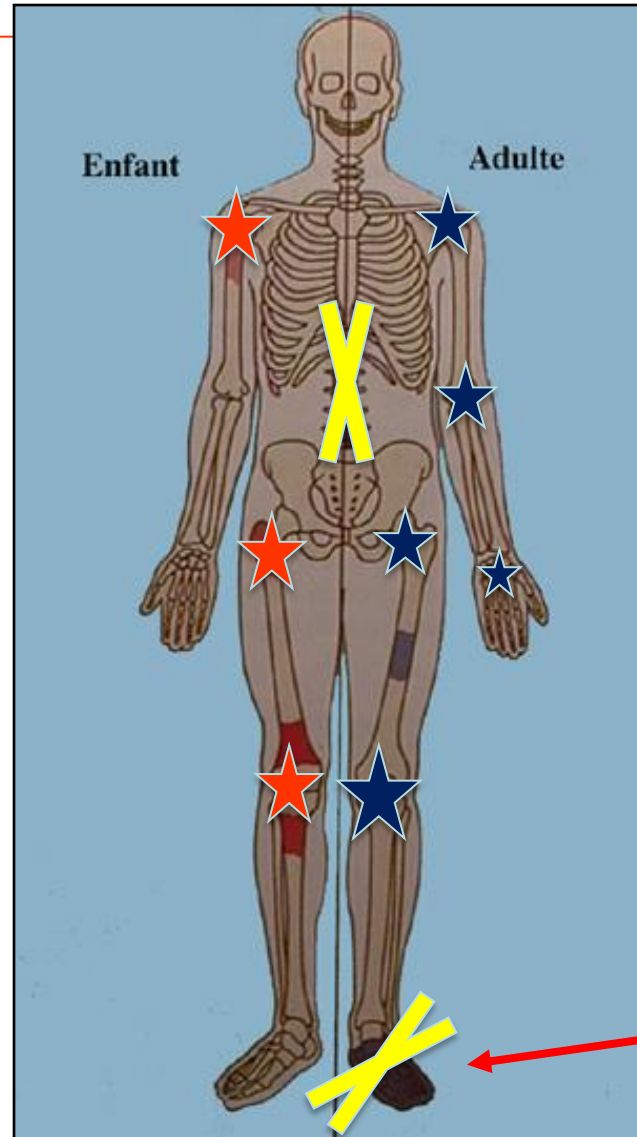


Arthrites , Ostéomyélites Aiguës Durée du traitement antibiotique Quoi de neuf ?

Dr S. Bevilacqua
CRIOAC Grand Est Nancy

Répartition des Ostéomyélites et Arthrites



Chez l'enfant

Genou
Hanche
Épaule

Chez l'adulte

Fémur
Rachis
Sacro-iliaques
Pied

Pied
diabétique

Que trouve -t-on dans la littérature?

- Sur les 15 dernières années:
 - Résultats arthrites :7161
 - Dont 1315 pour l'enfant
 - Résultats Osteomyelites :764
- Si on élimine :
 - ~~– Le pied diabétique~~
 - ~~– Les arthrites septique sur matériel, les arthrites de mains.~~
 - ~~– Les ostéomyélites vertébrales, chroniques~~
 - ~~– Les cas cliniques isolés~~
 - ~~– Les arthrites réactionnelles, origines vénériennes~~
 - ~~– Arthrite Lyme~~

Si on se limite au traitement antibiotique:

Nombre de Review sur le traitement ATB :

- 80 chez l'enfant
- 67 chez l'adulte

Nombre d'étude clinique sur le traitement ATB

- 22 chez l'enfant
- 14 chez l'adulte , pas d'étude randomisée

Chez l'enfant

- Nombreuses publications tant pour les ostéomyélites que les arthrites.
 - Etudes rétrospectives, Review
 - Etudes prospectives randomisées.
 - Des recommandations
 - Guideline IDSA en cours de rédaction:
 - « Diagnosis and Management of Bone and Joint Infections in Children » *Spring 2016*

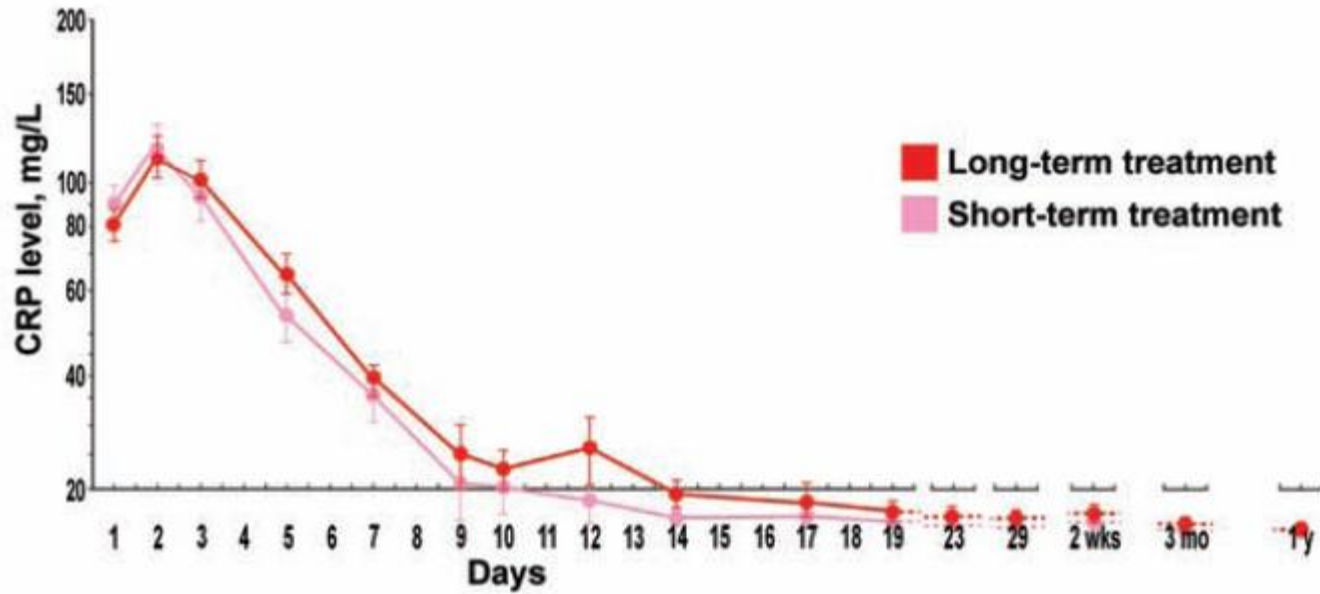
Prospective, Randomized Trial of 10 Days versus 30 Days of Antimicrobial Treatment, Including a Short-Term Course of Parenteral Therapy, for Childhood Septic Arthritis

H.Peltola et al CID 2009; 48:1201–10

—

clindamycin or a first-generation cephalosporin for 10 days or 30 days (IV for the first 2–4 days)

Variable	Patients		
	All (n = 130)	Short-term treatment group (n = 63)	Long-term treatment group (n = 67)
Sex, M:F	75:55	32:31	43:24
Age, median years (IQR)	6.2 (2.0–10.2)	6.2 (1.8–9.9)	6.6 (3.1–10.3)
Time from symptom onset to presentation, median days (IQR)	2.0 (1.0–4.0)	3.0 (1.0–4.0)	2.0 (1.0–4.0)
Localization of SA			
Hip	48	19	29
Knee	32	21	11
Ankle (tibiotalar)	30	14	16
Elbow	8	3	5
Shoulder	6	4	2
Sacroiliac joint	2	1	1
Multiple joint involvement	3	1	2
Duration of antimicrobial therapy, median days (IQR)	25 (10–30)	10 (10–15)	30 (30–30) ^a
Relapse	0	0	0
Late-onset reinfection	2	0	2 [†]
Full recovery at last follow-up visit	130 (100)	63 (100)	67 (100)



10 days of therapy probably as effective as a 30-day treatment

Clindamycin vs. first-generation cephalosporins for acute osteoarticular infections of childhood—a prospective quasi-randomized controlled trial

H. Peltola¹, M. Pääkkönen², P. Kallio¹, M. J. T. Kallio¹ and The OM-SA Study Group*

1) Children's Hospital, Helsinki University Central Hospital, and University of Helsinki and 2) Turku University Central Hospital, Turku, Finland

Clin Microbiol Infect 2012; 18: 582–589

TABLE 2. Per-protocol analysis

	Total N = 169	Randomized to:	
		Clindamycin N = 99	Cephalosporin N = 70
Gender, male/female	102/67	53/46	49/21
Age (years), median (IQR)	9 (6–11)	10 (6–12)	8 (4–11)
First symptoms (days), median (IQR)	3 (2–5)	3 (2–5)	3 (2–4)
Type of infection, no. (%)			
Osteomyelitis	82 (49)	50 (51)	32 (46)
Septic arthritis	80 (47)	44 (44)	36 (51)
Osteomyelitis + septic arthritis	7 (4)	5 (5)	2 (3)
Causative agent, no. (%)			
<i>Staphylococcus aureus</i>	142 (84)	88 (89)	54 (77)
<i>Streptococcus pyogenes</i>	15 (9)	7 (7)	8 (11)
<i>Streptococcus pneumoniae</i>	9 (5)	3 (3)	6 (9)
Other	3 (2)	1 ^a (1)	2 ^b (3)
Site from which agent cultured, no. (% of total)			
Joint and blood	22 (13)	13 (13)	9 (13)
Joint only	41 (24)	23 (23)	18 (25)
Bone and blood	17 (10)	8 (8)	9 (13)
Bone only	26 (16)	13 (13)	13 (19)
Blood only ^c	63 (37)	42 (43)	21 (30)
Initial value, mean ± SEM			
CRP (mg/L)	78 ± 4	82 ± 5	73 ± 7
ESR (mm/h)	48 ± 2	51 ± 3	42 ± 3
Blood leukocyte count (per mm ³);	10 900 ± 400	11 000 ± 500	10 800 ± 700
Treatment initiated with ampicillin/ammoxycillin ^d , no. (%)	14 (8)	6 (6)	8 (11)
Antimicrobials (days), median (IQR)			
Intravenous administration	3 (3–4)	3 (3–3)	3 (3–4)
Total course	24 (20–30)	23 (20–30)	24 (13–30)
Any complaint at the 12-month check-up (see text)	2	1	1

CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; IQR, interquartile range; SEM, standard error of the mean.

Research article

Open Access

Childhood osteomyelitis-incidence and differentiation from other acute onset musculoskeletal features in a population-based study

Øystein Rolandsen Riise*^{1,2}, Eva Kirkhus³, Kai Samson Handeland², Berit Flatø², Tor Reiseter⁴, Milada Cvancarova⁵, Britt Nakstad^{6,7} and Karl-Olaf Wathne^{1,8}

BMC Pediatrics 2008, **8**:45

The median duration of treatment was **42 days** (range 14–137) and the median duration of **intravenous treatment was 14 days** (range 12–49)

Pediatric Humeral Osteomyelitis

Street, M et al

Journal of Pediatric Orthopaedics: [Sept 2015 - 35 - 6 - 628–633](#)

Antibiotic therapy **averaged 2.7 weeks intravenous** and **2.6 weeks of oral therapy**

Et chez l'adulte?

Clinical Management of Septic Arthritis

Katie A. Sharff • Eric P. Richards • John M. Townes

Curr Rheumatol Rep (2013) 15:332

-Pas d'étude randomisée sur la durée

-2 semaines IV puis 4 semaines PO

Adult native septic arthritis: a review of 10 years of experience and lessons for empirical antibiotic therapy

Olivier Clerc^{1*}, Guy Prod'hom², Gilbert Greub², Giorgio Zanetti¹ and Laurence Senn¹

JAC 2011 May; 66(5) : 1168-73

10 years retrospective study between 1999 and 2008

233 episodes of septic arthritis. **Pas de durée de traitement**

Managing septic arthritis after knee ligament reconstruction

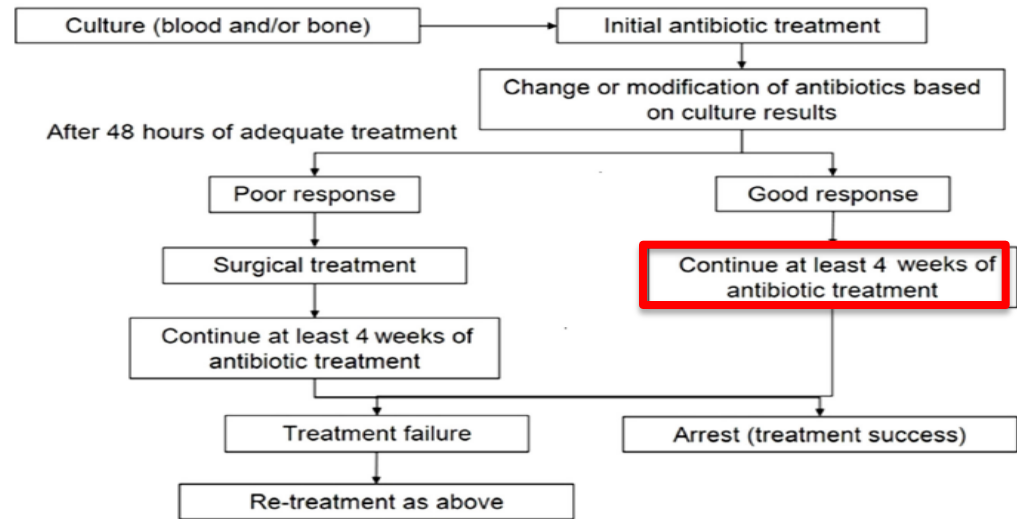
Raúl Torres-Claramunt^{1,4} • Pablo Gelber² • Xavier Pelfort³ • Pedro Hinarejos^{1,4} •
Joan Leal-Blanquet¹ • Daniel Pérez-Prieto¹ • Joan C. Monllau^{1,4}

Int Orthop May 2015

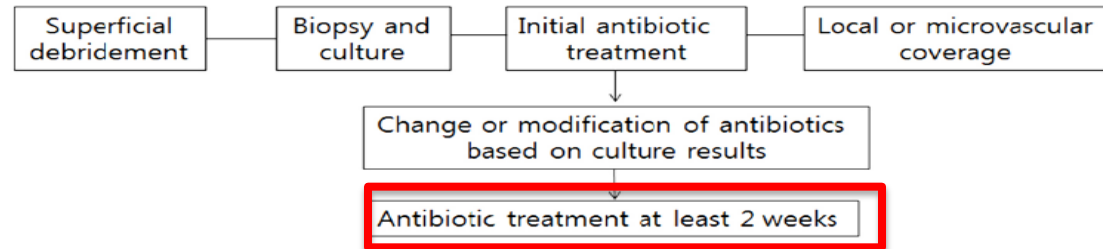
Duration of antibiotic treatment can vary between 4 and 14 weeks, most authors agree that it should be provided for **not less than six weeks**.

Study	Year of publication	No. knees	Incidence [n (%)]	Graft	Most common pathogens ^b	Days until diagnosis	Empiric antibiotic	Weeks IV/oral (total) ^a	Mean number lavages	Grafts removed
Burks et al. [14]	2003	1918	8 (0.42 %)	7 HT 1 BPTB	3 SA 1 PA	19	Not reported	6/0 (6)	2	7
Barker et al. [35]	2010	3126	18 (0.58 %)	5 HT 7 BPTB 6 Allo	6 SA 4 CNS 2 <i>P. acnes</i> 6 Unknown	32	Not reported	(6)	1.38	5
Fong and Tan [9]	2004	472	7 (1 %)	7 HT	4 SA 3 <i>Pepto</i> 1 <i>Klebsiella</i> 1 <i>Enterobacter</i>	24.5	Not reported	2.5/4 (6.5)	1.4	0
Indelli et al. [2]	2002	3500	6 (0.14 %)	4 BPTB 2 Allo	3 SA 2 CNS 1 <i>Strep</i>	33.5	Not reported	6/6 (6)	2.3	2
Judd et al. [8]	2006	1615	11 (0.68 %)	11 HT	1 SA 8 CNS 1 <i>Enterobacter</i> 1 <i>Propioni</i>	14.2	Cefazolin/ vancomycin	4/4 (4)	2.4	1
Katz et al. [36]	2008	801	6 (0.75 %)	2 HT 4 Allo	1 SA 6 CNS 1 <i>P. acnes</i>	16.4	Not reported	4–6 weeks	–	5
Shollin-Borg et al. [4]	2003	575	10 (1.7 %)	4 HT 6 BPTB	1 SA 6 CNS 1 <i>Propioni</i> 2 Unknown	15.4	Not reported	4–12 weeks	1 (and continuous irrigation)	0
Van Tongel et al. [30]	2007	1736	15 (0.86 %)	12 HT 2 BPTB 1 Allo	1 SA 8 CNS 1 <i>Enterococcus</i> 1 <i>E. cloacae</i> 3 Poly	10.9	Cloxacillin/ gentemycin	4/10 (±14)	1.9	1
Viola et al. [5]	2000	1794	13 (0.78 %)		2 CNS	7.7	Ciprofloxacin/ amoxicillin plus clavulanate	15–90 days	0.46	0
Shulz et al. [13]	2007	3077	24 (0.78 %)	12 BPTB 7 HT 4 Vicryl band 1 Trevira band	12 SA 5 CNS 2 <i>Strep</i> 4 Unknown	61.7	Ampiciline/ Sulbactam	Not reported	3.95	17
Schub et al. [37]	2009	4068	21 (0.52 %)	20 HT 1 Allo	3 SA 12 CNS 1 <i>E. faecalis</i> 1 <i>Coryne</i>	16.4	Vancomycin or cephalosporin	3/3 (3)	0.7	0
William et al. [19]	1997	2500	7 (0.3 %)	3 HT 4 BPTB	6 SA 2 CNS 1 <i>Pepto</i>	21.8	Cefazidime/ vancomycin	4–6/- (4–6)	1.57	4
Sonnery-Cottet et al. [7]	2011	1956	12 (0.61 %)	7 HT 4 BPTB 1 QT	11 CNS 1 <i>Propioni</i>	15.6	Not reported	Not reported	1.25	0
Tones-Caramunt et al. [3]	2013	810	15 (1.8 %)	11 HT 4 BPTB	3 SA 10 CNS 1 <i>Propioni</i>	23.9	Cefazidime/ vancomycin	2–3/3 (6)	1.3	1
McAllister et al. [11]	1999	831	4 (0.48 %)	1 HT 3 BPTB	4 SA	11.2	Not reported	4.7/3 (7.7)	2.75	0
Binnet et al. [20]	2007	1231	6 (0.49 %)	4 BPTB 2 HT	3 SA 1 PA	22	Cefazolin	3/- (3)	2.66	0
Sajovic et al. [38]	2009	1283	3 (0.23 %)	3 HT	1 SA 1 CNS 1 Unknown	8	Cloxacillin	2/4 (6)	1	0

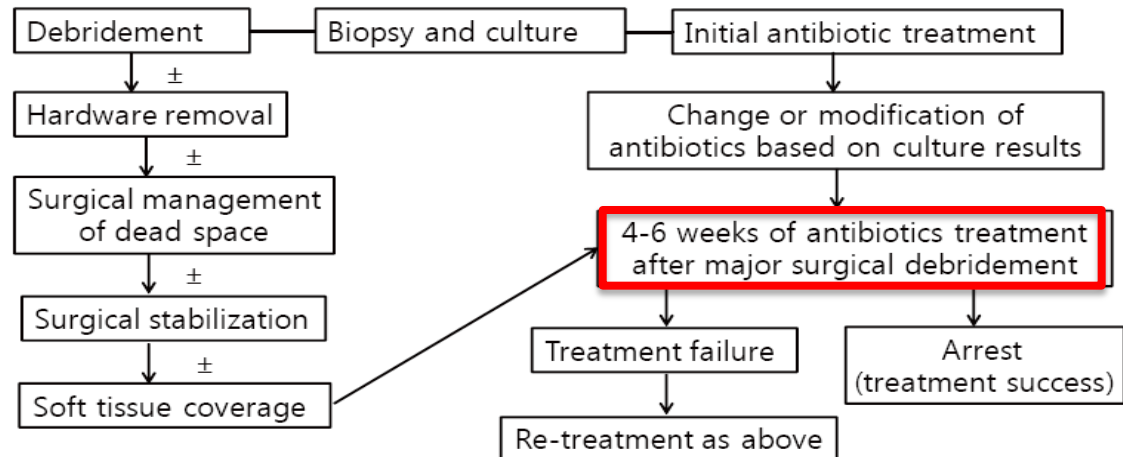
Type I
Medullary osteomyelitis



Type II
Superficial osteomyelitis



Type III or IV
Localized or diffuse osteomyelitis



Recommendations for the treatment of osteomyelitis



Ana Lucia L. Lima^a, Priscila R. Oliveira^{a,*}, Vladimir C. Carvalho^a, Sergio Cimerman^b, Eduardo Savio^c, on behalf of the Diretrizes Panamericanas para el Tratamiento de las Osteomielitis e Infecciones de Tejidos Blandos Group^d

BRAZ J INFECT DIS. 2014;18(5):526–534

~ Antibiotic therapy lasting 4 to six weeks.

Clinical Guidelines for the Antimicrobial Treatment of Bone and Joint Infections in Korea

The Korean Society for Chemotherapy, The Korean Society of Infectious Diseases, and The Korean Orthopaedic Association

Infect Chemother 2014;46(2):125-138

Septic arthritis

Treatment period should be **about 4–6 weeks, injectable antimicrobial** agents being administered for **at least 2 weeks**. After 2 weeks, treatment may be switched to oral antimicrobial agents if the symptoms improve (CIII).

Guidelines and Audit Working Group; British Society for Antimicrobial Chemotherapy; British Orthopaedic Association; Royal College of General Practitioners; British Health Professionals in Rheumatology. Guideline for the management of the hot swollen joint in adults with a particular focus on septic arthritis. J Antimicrob Chemother 2006;58:492-3.

Osteomyelitis

Lazzarini L, Mader JT, Calhoun JH. Osteomyelitis in long bones. J Bone Joint Surg Am 2004;86-A:2305-18.

Conclusion

- Chez l'enfant
 - Arthrites : **3-4 semaines** avec 7 jours IV(fonction de l'évolution CRP).
 - Ostéomyélites aiguës : **3-6 semaines** de traitement avec 7 jours IV.
 - **Relais oral précoce.**
 - Probable réponse en 2016:
 - « Diagnosis and Management of Bone and Joint Infections in Children » IDSA

-
- Chez l'adulte
 - Arthrites : **4 semaines** mais pas d'étude randomisée sur la durée des TTT
 - Il faut envisager des études randomisées
 - sur arthrites « hémotogènes » ?
 - sur arthrites liées « aux soins » ?
 - Ostéomyélites aiguës: **4 - 6 semaines** de traitement avec 7 jours IV et relais per os .
« Intérêt d'études mais recrutement.... »