Infections du système nerveux central

Lundi 23 mars 2026

Dr Marion Le Maréchal

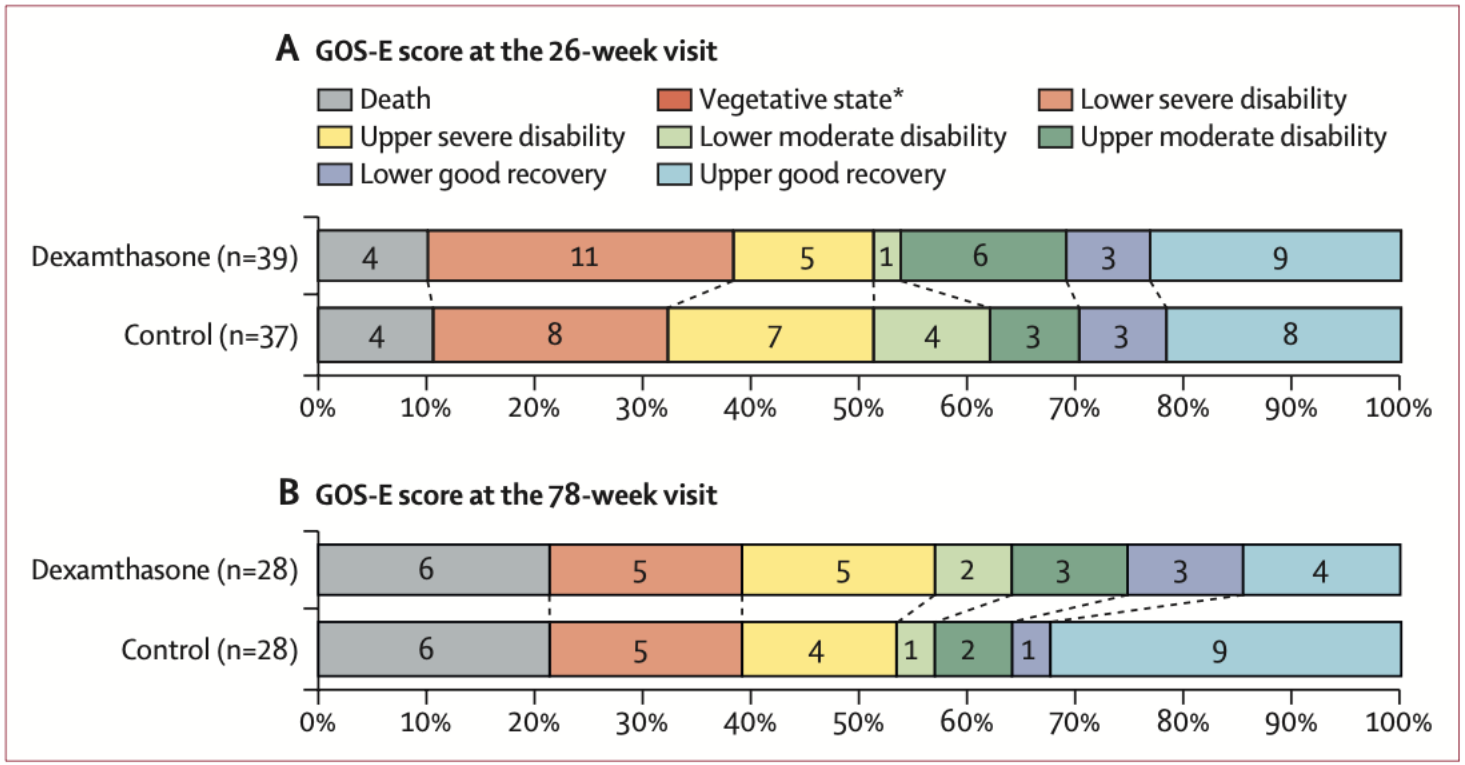
CHU Grenoble Alpes

Encéphalite herpétique et corticothérapie

Safety and efficacy of adjunct dexamethasone in adults with herpes simplex virus encephalitis in the UK (DexEnceph): a multicentre, observer-blind, randomised, phase 3, controlled trial

Tom Solomon, Cory Hooper, Ava Easton, Anna Rosala-Hallas, Bethany Facer, Perry Moore, Simon S Keller, Thomas Whitfield, Cristina Fernandez, Rachel Kneen, Michael J Griffiths, Kumar Das, Shona C Moore, Kelly Davies, Dianne Wheatley, Jean Paul Stahl, Ben Hardwick, Sylviane Defres, Benedict D Michael, DexEnceph Study Group, Girvan Burnside†, Mark A Ellul†*

	Dexamethasone		Control		Difference, HR, or OR (95% CI)*	p value
Primary outcome						
Verbal memory (WMS-IV) at the 26-week visit	n=39	71 (26)	n=42	69 (25)	Adjusted difference in mean 1·77 (–9·57 to 13·12)	0·76
Secondary neuropsychology outcomes at the 26-week visit						
Visual memory (WMS-IV)	33	69 (25)	31	71 (26)	Adjusted difference in mean –1·09 (–13·40 to 11·22)	0·86
Immediate memory (WMS-IV)	33	71 (25)	31	67 (24)	Adjusted difference in mean –1·19 (–14·14 to 11·75)	0·85
Delayed memory (WMS-IV)	33	68 (24)	31	65 (24)	Adjusted difference in mean –0·02 (–13·26 to 13·21)	1·0
Working memory (WAIS-IV)	36	85 (25)	36	82 (27)	Adjusted difference in mean 4·55 (–7·81 to 16·91)	0·47
Processing speed (WAIS-IV)	33	80 (23)	32	77 (26)	Adjusted difference in mean 4·00 (–7·87 to 15·87)	0·50
Trail Making Test A, seconds	34	96 (99)	35	134 (119)	Adjusted difference in mean –38·29 (–89·16 to 12·57)	0·14
Trail Making Test B, seconds	33	165 (96)	34	202 (106)	Adjusted difference in mean –33·72 (–80·25 to 12·81)	0·15
ACE-III	32	69 (28)	28	63 (29)	Adjusted difference in mean 4·85 (–9·32 to 19·02)	0·50
Perceived deficits questionnaire	29	30 (17)	25	28 (14)	Adjusted difference in mean 2·52 (–6·42 to 11·46)	0·57
Beck Anxiety Inventory	27	14 (11)	26	11 (11)	Adjusted difference in mean 3·33 (–2·99 to 9·64)	0·29
Beck Depression Inventory	27	17 (12)	26	14 (11)	Adjusted difference in mean 2·72 (–3·84 to 9·29)	0·41



Glasgow Outcome Scale Extended Score	***Interpretation***
8 = Upper good recovery	Fully recovered or may have minor symptoms not affecting daily life
7 = Lower good recovery	Able to return to previous life roles, but with symptoms that affect daily life
6 = Upper moderate disability	Some disability exists, but able to partly return to previous life roles
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4 = Upper severe disability	Dependent, needs infrequent assistance in basic activities in daily life, or help with activities outside the home
3 = Lower severe disability	Dependent, needs frequent assistance in basic activities in daily life
2 = Vegetative state	No awareness of self or environment
1 = Dead	Dead

	Dexamethasone (n=47)	Control (n=47)
Neuropsychiatric disorders	7 (15%)	5 (11%)
Seizure	1 (2%)	1 (2%)
Headache	2 (4%)	0
Autoimmune encephalitis or meningoencephalitis	3 (6%)	0
Cognitive disorder	0	2 (4%)
Hepatic encephalopathy	0	1 (2%)
Peroneal nerve palsy	1 (2%)	0
Suicidal ideation	0	1 (2%)
Thrombotic disorders	2 (4%)	0
Deep vein thrombosis	1 (2%)	0
Pulmonary embolism	1 (2%)	0
Infections	1 (2%)	0
Lower respiratory tract infection	1 (2%)	0
Metabolic and general	1 (2%)	3 (6%)
Acute kidney injury	1 (2%)	0
Dehydration	0	1 (2%)
Fall	0	2 (4%)

Data are number of patients affected (%).

Table 3: **Serious adverse events**

Limites principales de l’étude

- Randomisation jusqu’à J7 de la PCR positive
- Pas d’étude systématique de la réplication virale dans le LCS

- Quoi en tirer ? Utilisation de DXM dans les encéphalites herpétiques si besoin neurologiquement

Diagnostic des ISN

Brain biopsy and metagenomic sequencing enhance aetiological diagnosis of encephalitis

Yusuke Sakiyama,[1] Jun-Hui Yuan,[1] Akiko Yoshimura,[1] Mika Takeuchi,[1] Yoshimitsu Maki,[2] Takuma Mori,[1] Jun Takei,[1] Masahiro Ando,[1] Yu Hiramatsu,[1] Satoshi Nozuma,[1] Yujiro Higuchi,[1] Hajime Yonezawa,[3] Mari Kirishima,[4] Masayuki Suzuki,[5] Takahiro Kano,[6] Monami Tarisawa,[6] Shunta Hashiguchi,[7] Misako Kunii,[7] Shoki Sato,[8] Ikuko Takahashi-Iwata,[8] Akihiro Hashiguchi,[1] Eiji Matsuura,[1] Shuji Izumo,[1] Akihide Tanimoto[4] and Hiroshi Takashima[1]

Yeboah *et al. BMC Infectious Diseases* (2025) 25:1005
https://doi.org/10.1186/s12879-025-11436-x

BMC Infectious Diseases

RESEARCH Open Access

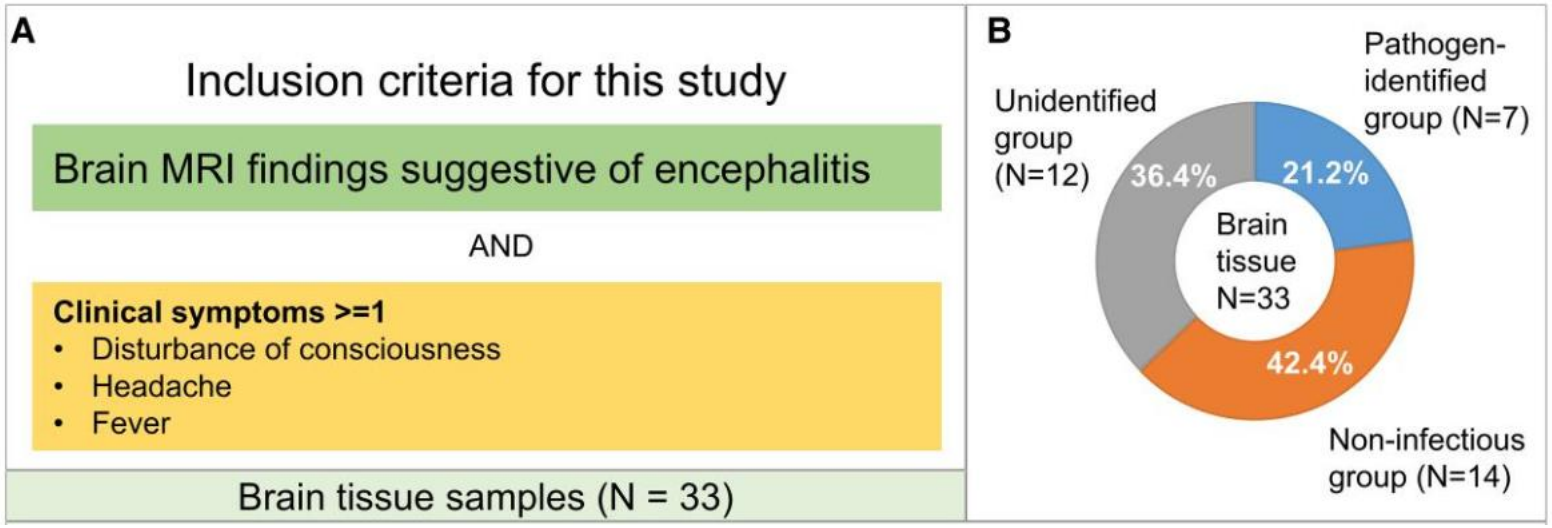
Next-generation sequencing reveals viral aetiologies of encephalitis in Ghana: a prospective cross-sectional study

Richmond Yeboah[1,2], Richmond Gorman[1], Philip El-Duah[3], James Osei-Mensa[1], Henry Kyeremateng Acheampong[1], Emmanuella Nyarko-Afriyie[1], Michael Owusu[1,2], Yaw Ampem Amoako[1,4], Kwasi Obiri-Danso[2], Richard Odame Phillips[1,4], Victor Max Corman[3], Christian Drosten[3] and Augustina Angelina Sylverken[1,2*]

Metagenomic next-generation sequencing of cerebrospinal fluid: a diagnostic approach for varicella zoster virus-related encephalitis

Jin Tang[1], Kaimeng Wang[2], Haoming Xu[3] and Jingzhe Han[4*]

[1]Department of General Practice, The Second Affiliated Hospital of Xi 'an Jiaotong University, Xi'an, China, [2]Department of Neurology, Hebei General Hospital, Shijiazhuang, China, [3]Department of Geriatric Respiratory, Hebei General Hospital, Shijiazhuang, China, [4]Department of Neurology, Harrison International Peace Hospital, Hengshui, China



Comparative performance of NGS and PCR in viral detection

Out of the 43 cerebrospinal fluid (CSF) samples analyzed, 18 (41.9%) yielded at least one viral pathogen through PCR and/or NGS, while 25 samples (58.1%) remained negative for all viral targets tested by both methods. Compared with NGS, PCR detected 1 additional case of ENTV, 1 additional case of RABV, and 3 additional cases of CMV. Both methods detected HSV (10%) and VZV (3%) at similar rates. However, NGS identified a broader range of viruses not targeted by PCR, including HIV (28%), EBV (7%), HRV (3%), mumps virus (3%), rotavirus A (3%), and HHV-6 (3%). (Table 3).

Infectious Diseases Now 52 (2022) 1–6

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com/en

Original article

Changing profile of encephalitis: Results of a 4-year study in France

A. Mailles[a,b,*], X. Argemi[c], C. Biron[d], P. Fillatre[b,e], T. De Broucker[f], R. Buzelé[g], A. Gagneux-Brunon[h], I. Gueit[i], C. Henry[f], S. Patrat-Delon[j], A. Makinson[k], E. Piet[l], H. Wille[m], M.O. Vareil[m], O. Epaulard[b,n], M. Martinot[o], P. Tattevin[b,j], J.P. Stahl[b,n], the scientific committee[1] the investigators[2],

Table 3
Causative agents of encephalitis, strength of diagnosis, modes of transmission, and vaccine availability, ENCEIF cohort, France 2016–19 ($n = 494$).

Causes of encephalitis	*n*	% of cases with an identified cause	Total %	*Confirmed*	*Probable*	*Possible*	Vectorial transmission	Zoonotic transmission	Vaccine preventable, i.e. a vaccine exists, with or without recommen-dations
Herpes simplex virus	132	40.7	26.7	131	0	0			
Varicella-zoster virus	65	20.1	13.2	64	0	1			X
Tick-borne encephalitis virus (TBEV)	26	8.0	5.3	12	12	2	Ticks	X	X
Listeria monocytogenes	23	7.1	4.7	21	2	0		X	
Mycobacterium tuberculosis	11	3.4	2.2	8	2	1		Rarely	X
Unknown cause	170		34.4						

Amélioration du diagnostic étiologique des encéphalites

- Difficile sans biopsie cérébrale
- Aide d’une approche multi-omique (au moins pour DD)
- Nécessité de construire un nouvel outil de surveillance national

Surveillance de la PIC dans les méningites à pneumocoque

Clinical Microbiology and Infection 31 (2025) 979–986

Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Original article

Mortality and sequelae associated with regional use of intracranial devices among patients with pneumococcal meningitis: a nationwide, population-based cohort study

Isabella L. Platz [1,*], Malte M. Tetens [1], Nanna S. Andersen [2,3], Jacob Bodilsen [4,5], Ram B. Dessau [6,7], Svend Ellermann-Eriksen [8], Jens K. Møller [7,9], Lene Nielsen [10], Alex Christian Yde Nielsen [11], Kirstine K. Søgaard [4,12], Christian Østergaard [13,14], Anne-Mette Lebech [1,15], Lars Haukali Omland [1,15], Niels Obel [1,15]

Clinical Microbiology and Infection 31 (2025) 885–887

Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Commentary

Intracranial pressure management in pneumococcal meningitis: first, do no harm

Matthijs C. Brouwer*, Diederik van de Beek

Amsterdam University Medical Centres (UMC), University of Amsterdam, Department of Neurology, Amsterdam Neuroscience, Amsterdam, The Netherlands

Problématique de la surveillance de la PIC

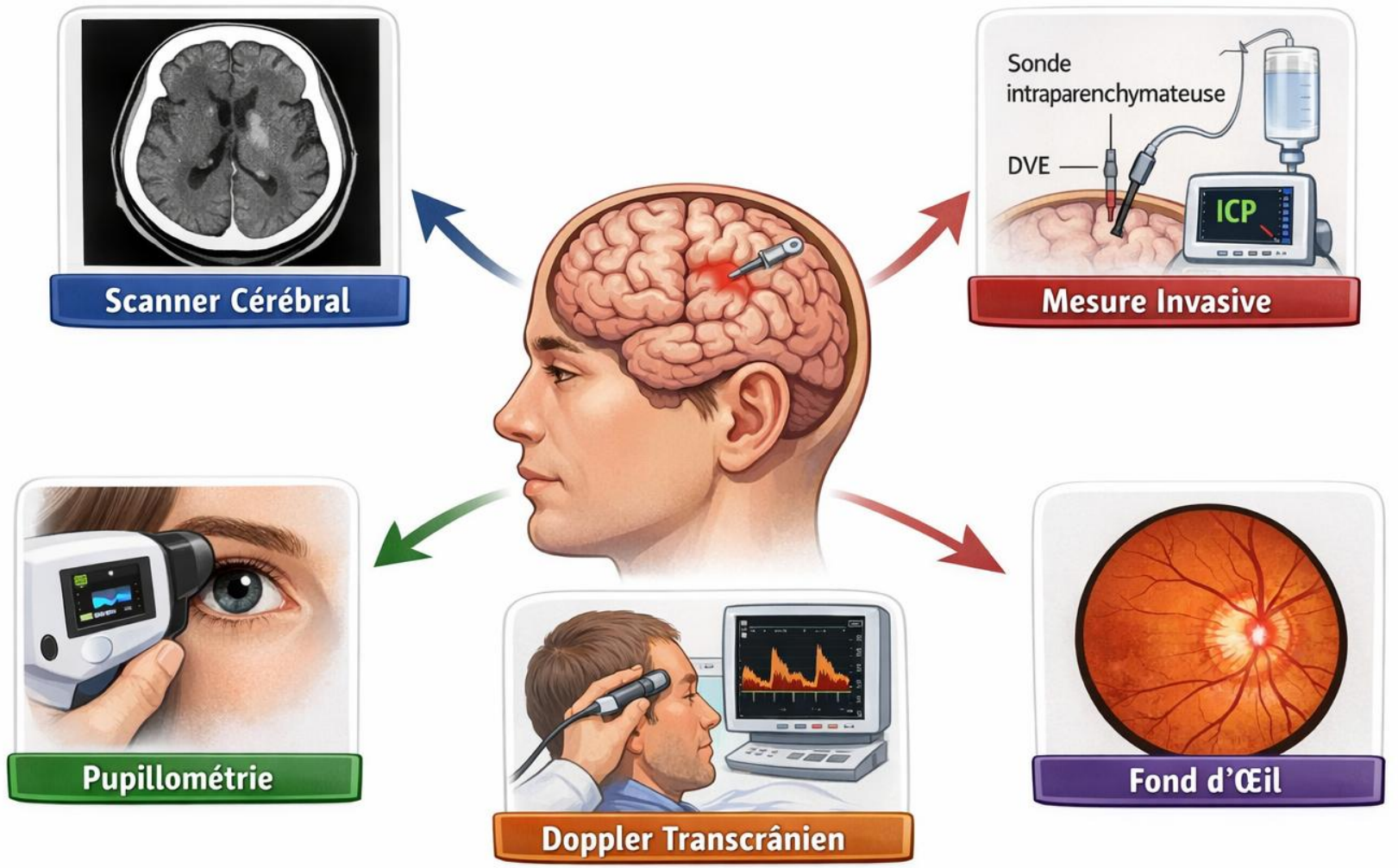
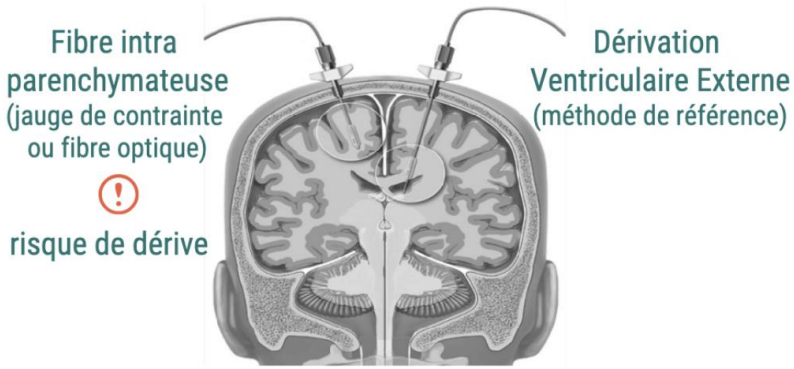


Figure f - Capteurs de monitorage invasif de la pression intracrânienne - Y. Launey & S. Sigaut, Fiche flash SFAR 2022



Étude avant/après sur l'utilisation de PIC dans les méningites à pneumocoque : 333/305
CJP : décès

Pas d'efficacité non plus sur l'épilepsie, la surdité, la VM, les séquelles

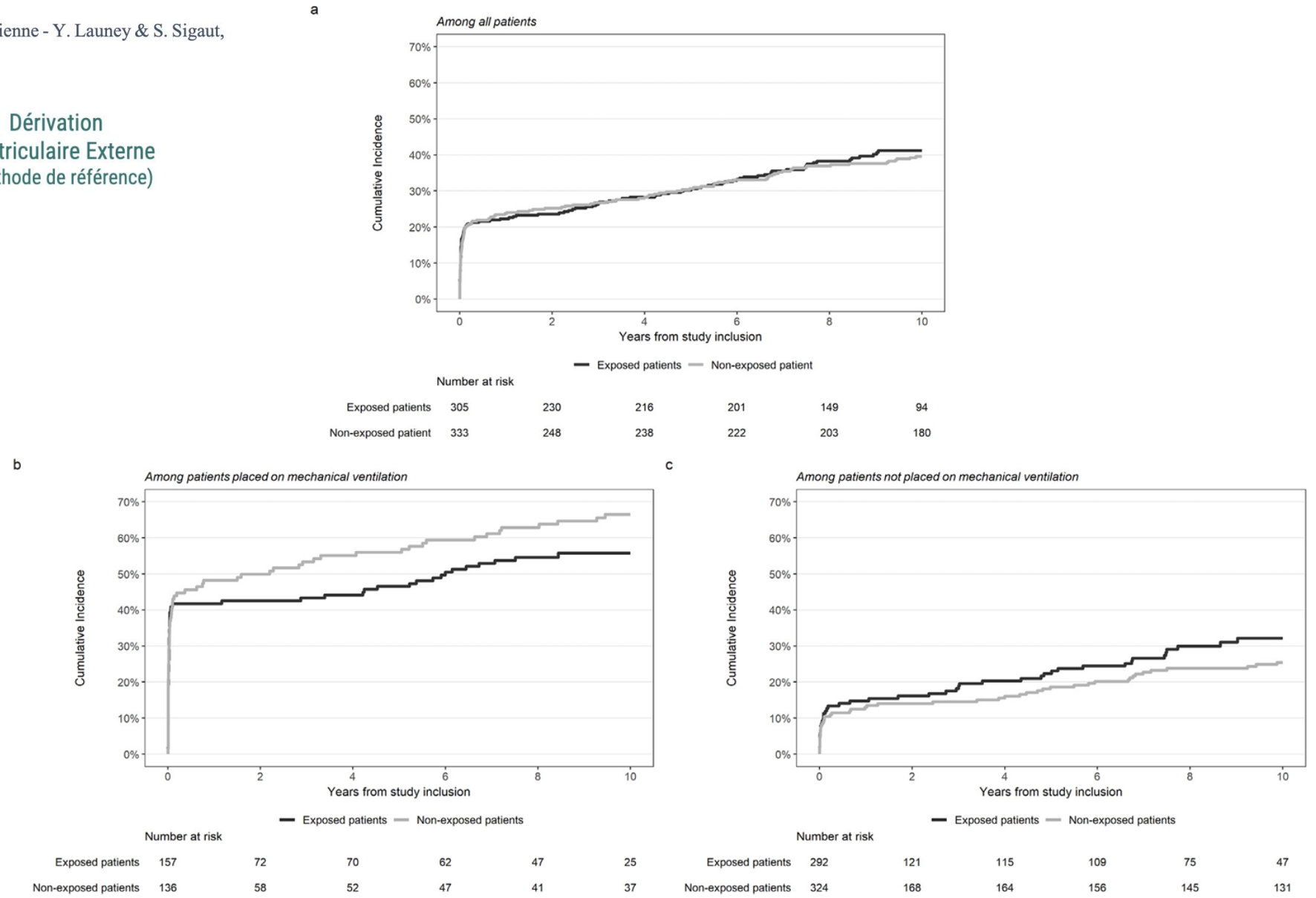


Fig. 1. Risk of death. Risk of death among patients with *Streptococcus pneumoniae* meningitis admitted in geographical regions and during a time period in which the use of intracranial devices was the routine practice (exposed patients) and in which the use of intracranial devices was not the routine practice (non-exposed patients). (a) Among all patients, (b) patients placed on mechanical ventilation, and (c) patients not placed on mechanical ventilation.

Problématiques posées

Méningite à pneumocoque = **augmentation PIC**

Sur une étude Hollandaise antérieure (1816 patients) :

- 42% des patients avec Pression d'ouverture > 50cm H_2O
- Médiane de pression : 44cm H_2O (norme <25)

- Quel impact sur l'**outcome** ?

- **Biais** dans les études sur PIC : mise en place si sédation ou GCS bas

Quel design sans trop de risque pour répondre à ces questions ? (1/100,000 habitants)

Koelman, CID, 2022

Relais PO dans les abcès cérébraux

Infectious diseases now 55 (2025) 105043

Contents lists available at ScienceDirect

Infectious Diseases Now

journal homepage: www.sciencedirect.com/journal/infectious-diseases-now

Original article

Safe early switch to oral antibiotics in immunocompetent adults with intracranial bacterial suppurations: Retrospective of a 25-year experience in a tertiary care centre

Aurélie Besnard [a,*], Anne-Marie Korinek [a], Rémy Bernard [a], Lamine Abdennour [a], Bertrand Mathon [b,f], Camille Bombled [a], Alice Jacquens [a,e], Alexandre Bleibtreu [c,d], Vincent Degos [a,e]

Possibilité de relayer PO après 1-2 semaines traitement IV

190 patients

Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Guidelines

European society of Clinical Microbiology and Infectious Diseases guidelines on diagnosis and treatment of brain abscess in children and adults

Table 1
Patients' general characteristics.

Variables	Total N = 190	GOSE ≥ 7 N = 154	GOSE < 7 N = 36	P value
Male	120 (63.2)	100 (64.5)	20 (57.1)	0.455
Age	51 (40–62)	51 (39.5–61.5)	55 (40.5–65.5)	0.318
Risk Factors for developing ICBS	141 (74.2)	114 (73.5)	27 (77.1)	0.672
Meningeal Breach	107 (56.3)	84 (54.2)	23 (65.7)	0.199
Postoperative	83 (43.7)	62 (40.0)	21 (60.0)	**0.030**
Post-traumatic	9 (4.7)	7 (4.5)	2 (5.7)	0.747
Contiguous infection	15 (7.9)	15 (9.7)	0 (0)	0.107
Systemic infection*	17 (8.9)	14 (9.0)	3 (8.6)	0.948
Stroke/ Neurodegenerative condition	7 (3.7)	2 (1.3)	5 (14.3)	**0.001**
Congenital cardiopathy	6 (3.2)	6 (3.9)	0 (0)	0.311
Clinical features				
GCS at admission	15 (13.5–15)	15 (14.5–15)	13 (8–15)	**<0.001**
15	128 (67.4)	116 (74.8)	12 (34.3)	**<0.001**
11 – 14	37 (19.5)	26 (16.8)	11 (31.4)	0.071
8 – 10	11 (5.8)	6 (3.9)	5 (14.3)	**0.038**
3 – 7	14 (7.4)	7 (4.5)	7 (20.0)	**0.005**
Biology at admission				
CRP > 5 mg/L	104 (54.7)	86 (55.5)	18 (51.4)	0.670
CRP ≤ 5 mg/L	34 (17.9)	32 (20.6)	2 (5.7)	**0.037**
Leukocytes ≥ 10 G/L	107 (56.3)	80 (51.6)	27 (77.1)	**0.002**
Leukocytes < 10 G/L	77 (40.5)	69 (44.5)	8 (22.9)	**0.021**
Imaging parameters at admission				
Abscess	135 (71.1)	115 (74.2)	20 (57.1)	**0.034**
Empyema	64 (33.7)	47 (30.3)	17 (48.6)	**0.033**
Single lesion	170 (89.5)	139 (89.7)	31 (88.6)	0.838
Multiple lesions	20 (10.5)	16 (10.3)	4 (11.4)	0.838

Glasgow Outcome Scale Extended Score	***Interpretation***
8 = Upper good recovery	Fully recovered or may have minor symptoms not affecting daily life
7 = Lower good recovery	Able to return to previous life roles, but with symptoms that affect daily life
6 = Upper moderate disability	Some disability exists, but able to partly return to previous life roles
5 = Lower moderate disability	Independent, but cannot return to one or more life roles
4 = Upper severe disability	Dependent, needs infrequent assistance in basic activities in daily life, or help with activities outside the home
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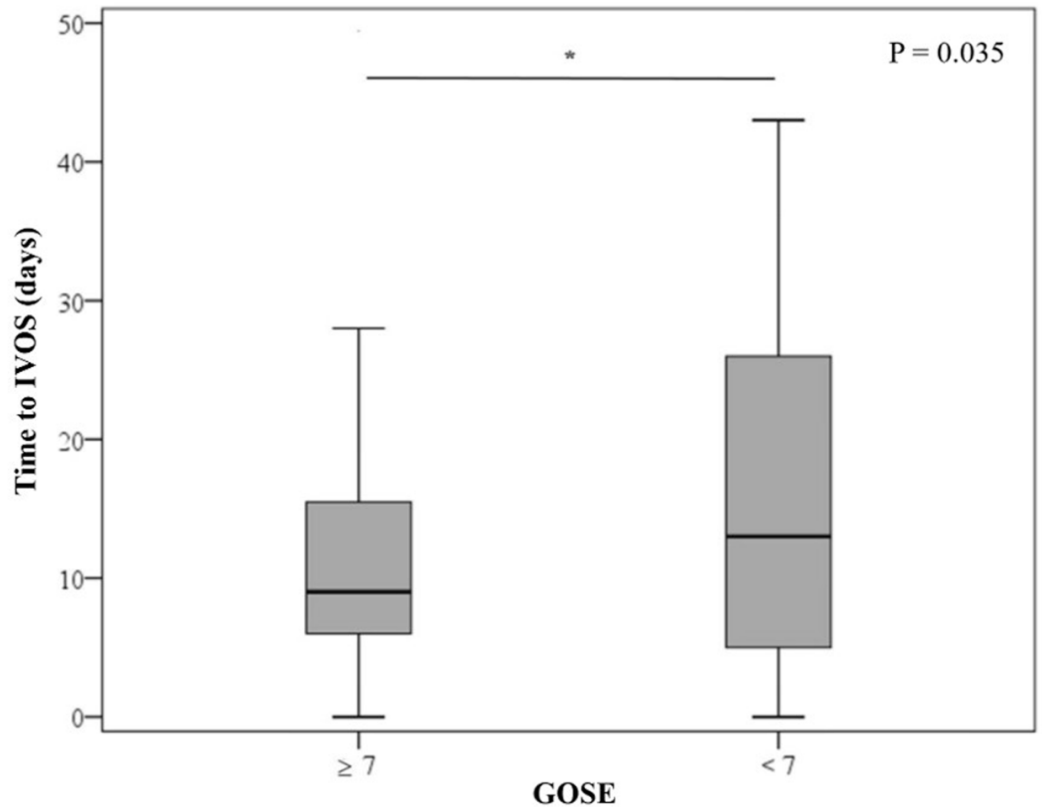
2 = Vegetative state	No awareness of self or environment
1 = Dead	Dead

Table 2
Duration of treatment and recourse to intravenous to oral switch according to 6-month Glasgow Outcome Scale Extended score.

Variable	Total (n = 190)	GOSE ≥ 7 (n = 154)	GOSE < 7 (n = 36)	P value
IVOS	172 (90.5)	142 (92.2)	30 (83.3)	0.116
Total antibiotics duration (days)	70 (60–88)	69 (60–85)	73 (64 – 94)	0.106
Time to IVOS (day)	9 (5–15)	8 (5–15)	13 (5–23)	**0.035**
Early IVOS (≤10 days)	108 (56.8)	96 (62.4)	12 (33.3)	**0.002**
IVOS ≤ 5 days	50 (26.3)	42 (27.3)	8 (22.2)	0.675
IVOS ≤ 2 days	19 (10.0)	16 (10.4)	3 (8.3)	1.000



Glasgow Outcome Scale Extended Score

8 = Upper good recovery

7 = Lower good recovery

6 = Upper moderate disability
5 = Lower moderate disability
4 = Upper severe disability

3 = Lower severe disability
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1 = Dead

Table 4

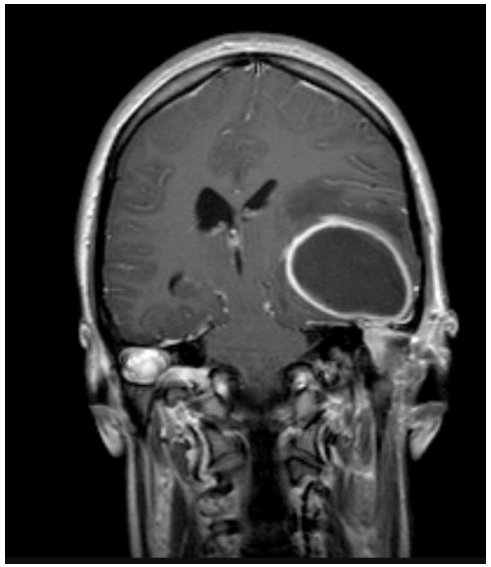
Univariate analysis of safety and adverse effects. Early switch from IV to oral antibiotherapy (IVOS $\leq$ 10 days) compared with longer intravenous therapy.

Variable	Total N = 190	Early IVOS N = 108	IV > 10 days N = 82	Pvalue
6-month GOSE < 7	36 (18.9)	12 (11.1)	24 (29.3)	**0.002**
Stereotaxic aspiration	113 (59.5)	60 (55.5)	53 (64.6)	0.207
Craniotomy	94 (49.5)	53 (49.1)	41 (50.0)	0.899
Surgical revision	65/190 (34.2)	26/108 (24.1)	39/82 (47.6)	**0.002**
0	125	82	43	
1	60	25	35	
>1	5	1	4	
Surgical revision > 30 days after the first ICBS surgery	15 (7.9)	8 (7.4)	6 (7.3)	0.981
Adverse effects of treatment	145 (76.3)	84 (77.8)	61 (74.4)	0.897

The most frequently used antibiotics for intravenous empiric treatment were: thiophenicol in 105 patients (55 %), amoxicillin in 89 (47 %), a different beta-lactam in 67 (35 %), rifampicin in 53 (28 %) and fluoroquinolone in 32 (17 %) (Supplementary Table 4). The most common combination therapy was penicillin with thiophenicol (87/190 patients = 46 %).

The antibiotics most often used for oral relay were amoxicillin in 109 patients (57 %), rifampicin in 89 (47 %), thiophenicol in 78 (41 %) and quinolone in 47 (25 %). Oral antibiotics were combined (usually bitherapy) in almost every patient (168/172 = 98 %).

The most common combinations were amoxicillin with thiophenicol (53/172 patients = 31 %) and amoxicillin with rifampicin (48/172 = 28 %).



Compound (reference[s] for CSF penetration)	AUC_{CSF}/AUC_S[b]	
	Uninflamed or mildly inflamed meninges	Strong meningeal inflammation
Penicillins	**0.02**	**0.2**
Cephalosporins	**0.007–0.1**	**0.15**
Carbapenems	**0.2**	**0.3**
Fluoroquinolones	**0.3–0.7**	**0.7–0.9**
Ciprofloxacin (173, 261)	0.24, 0.43	0.92
Ofloxacin (169)	0.62	
Levofloxacin (189, 223)	0.71	
Moxifloxacin (4, 5, 105)	0.46	0.79 (0.71–0.94)
Macrolides (98)		
Clarithromycin (137)	Not available	0.18
Tetracyclines	Ratios of individual CSF and serum samples suggest AUC ratio ~0.2	Ratios of individual CSF and serum samples suggest AUC ratio ~0.2
Doxycycline (56, 107, 108, 269)		
Linezolid (20, 252)	0.9 (0.8–1)	Not available
Metronidazole (93, 101, 258)	Not available	0.87
Rifamycins		
Rifampin (52, 62, 89, 106, 150, 163, 174)	0.22	Not available
Trimethoprim and sulfamethoxazole (57, 125, 257)		
Trimethoprim	0.18	0.42–0.51
Sulfamethoxazole	0.12	0.24–0.30

Nau, CM Rev, 2010

The most frequently used antibiotics for intravenous empiric treatment were: thiophenicol in 105 patients (55 %), amoxicillin in 89 (47 %), a different beta-lactam in 67 (35 %), rifampicin in 53 (28 %) and fluoroquinolone in 32 (17 %) (Supplementary Table 4). The most common combination therapy was penicillin with thiophenicol (87/190 patients = 46 %).

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Diffusion LCR

Compound (reference[s] for CSF penetration)	AUC_{CSF}/AUC_S[b]	
	Uninflamed or mildly inflamed meninges	Strong meningeal inflammation
Fluoroquinolones	**0.3–0.7**	**0.7–0.9**
Ciprofloxacin (173, 261)	0.24, 0.43	0.92
Ofloxacin (169)	0.62	
Levofloxacin (189, 223)	0.71	
Moxifloxacin (4, 5, 105)	0.46	0.79 (0.71–0.94)

Nau, CM Rev, 2010

TABLE 1. *Serum levels of three babies*

Infant	Treatment day	Serum (μg/ml)		CSF (μg/ml)	CSF: peak serum (%)
		Peak	Trough		
A[a]	2	45.9	32.5		
	3	54.4	16.4	29.5[b]	54
	5	43.9	40.9	25.3[b]	57
	8	33.4	27.2	15.0[b]	45
	11	37.9			
	14	33.6	28.7	15.4[b]	46
	Mean ± SD[c]	41.5 ± 8.2	29.1 ± 8.9	21.3 ± 7.3	50
B[d]	3	14.1	11.7		
	5	14.6	10.0	13.0[e]	89
	6			26.9[e]	
	7			36.6[e]	
	8	27.2	22.4	23.8[e]	87
	9			19.2[e]	
	10			29.9[e]	
	12			31.7[e]	
	13			19.3[e]	
	17			29.3[e]	
	20			14.7[e]	
	2′	19.3	14.7	12.9[e]	67
	Mean ± SD[c]	20.4 ± 6.4	13.6 ± 6.6	16.6 ± 6.3[e]	66.5
C[f]	3	35.4	26.2	30.8[b]	87

Dunkle, AAC, 1977

Perspectives

- Etude ORAL (PI J. Bodilsen, Investig France : P. Tattevin)

- En Mars 2026 : 161 patients inclus (obj: 450)

STUDY PROTOCOL Open Access

Partial oral antibiotic treatment for bacterial brain abscess: an open-label randomized non-inferiority trial (ORAL)

Jacob Bodilsen[1,2*], Matthijs C. Brouwer[2,3], Diederik van de Beek[2,3], Pierre Tattevin[2,4,5], Steven Tong[6,7], Pontus Naucler[8] and Henrik Nielsen[2,9]

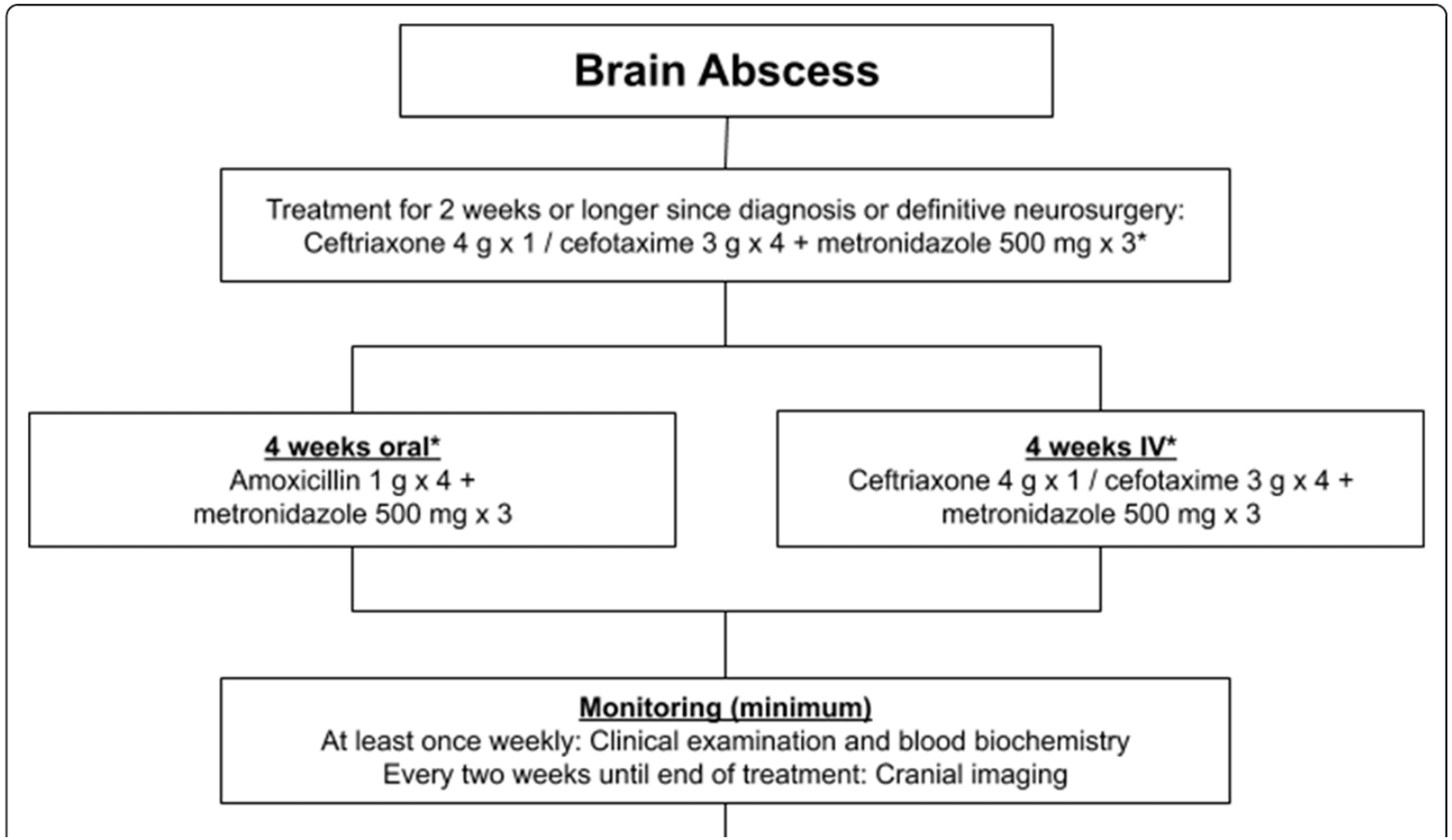

Table 1 Antibiotic treatment recommendations for the ORAL trial[a]

	Intervention group (2 weeks IV + 4 weeks oral)	Standard group (6 weeks IV)
First 2 weeks	Ceftriaxone 4 g × 1 / cefotaxime 3 g × 4 + metronidazole 500 mg × 3	Ceftriaxone 4 g × 1 / cefotaxime 3 g × 4 + metronidazole 500 mg × 3
Next 4 weeks	Oral amoxicillin 1 g × 4 + metronidazole 500 mg × 3	Ceftriaxone 4 g × 1 / cefotaxime 3 g × 4 + metronidazole[b] 500 mg × 3
In case of *Streptococcal spp.* with a minimal inhibitory concentration for penicillin ≥1 mg/L, beta-lactam allergy, non-susceptibility, interaction with other drugs, or development of drug fever.	a) Oral moxifloxacin 400 mg × 1 + metronidazole 500 mg × 3 b) Oral linezolid 600 mg × 2 + metronidazole 500 mg × 3 c) Oral clindamycin 600 mg × 4	a) Meropenem 2 g × 3 b) Moxifloxacin 400 mg × 1 + metronidazole 500 mg × 3 c) Clindamycin 600 mx 4


Merci de votre attention