

LE CONSULENZE NEUROLOGICHE URGENTI ... IN MEDICINA



FRANCESCO COREA - NEUROLOGIA,
FOLIGNO

Disclosures: none



A photograph of a hospital hallway with blue-framed glass doors. A red fire extinguisher is mounted on the wall to the right. A white text box is overlaid in the center of the image.

2007—> 2020 MEDICINA GENERALE

Posti letto 30.590

Ricoveri 1.109.921

Giornate di degenza 10milioni

Degenza media 9,1

Utilizzo posti letto 91,8

-20% nel 2020 posti letto (24mila)

Ricoveri 700mila

Giornate 7 milioni


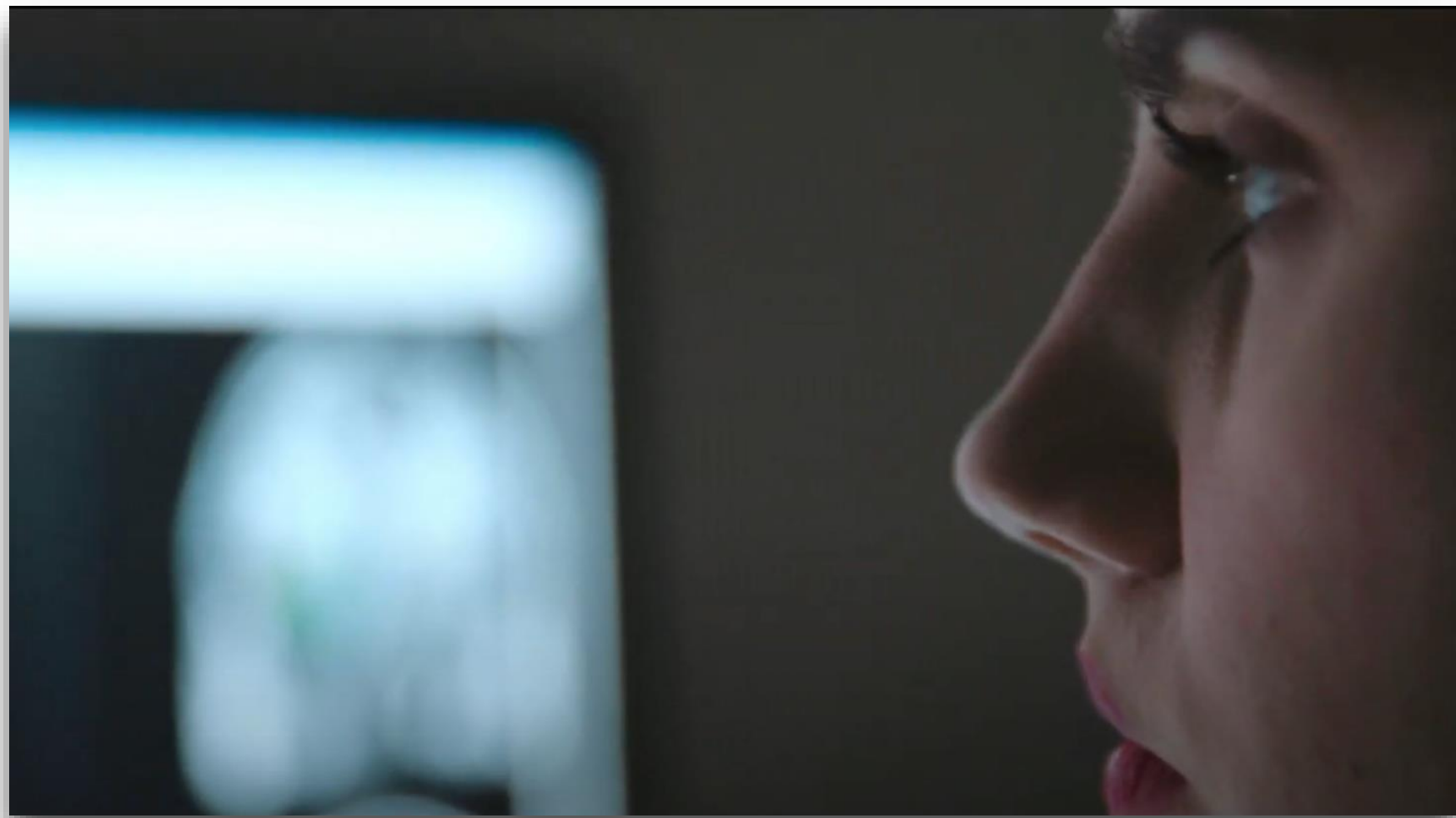
Degenza media 10

Utilizzo posti letto 87%

Conosci il neurologo, proteggi il tuo cervello.



Sin
SOCIETÀ ITALIANA DI NEUROLOGIA



Instagram post by **aanbrain** (Segui già). The post features a video of a man with curly hair and a beard, wearing a blue shirt, speaking. In the background, a framed certificate is visible with the name "Flanary" and the title "MAGISTRI". The video has a "cameo" watermark. The post text reads: "Yes, Dr. Glaucomflecken, we will cover neuro-ophthalmology at #AANAM, but we didn't forget about ALL the OTHER subspecialties of neurology!". Below the text, it says "March 17 is the last day to save with advance registration discounts. Visit the link in our bio to learn more and to complete your registration." and lists several hashtags: #Neurology #Neurologist #NeurologyResident #Neuro #Neuroscience #Neurological #AANscience #NeurologyRF #AANadvocacy #NeurologyProud. The post has 22 likes and a translation option. A comment from "neurodr Correa" says "... probably". The post is dated "MARZO 15".

Will Flanary, MD

NEUROLOGICAL PATIENT CARE IN EMERGENCY DEPARTMENTS. A REVIEW OF THE CURRENT SITUATION IN SPAIN

Neurologia. 2011 May;26(4):233-8. doi: 10.1016/j.nrl.2010.07.033. Epub 2010 Nov 30.

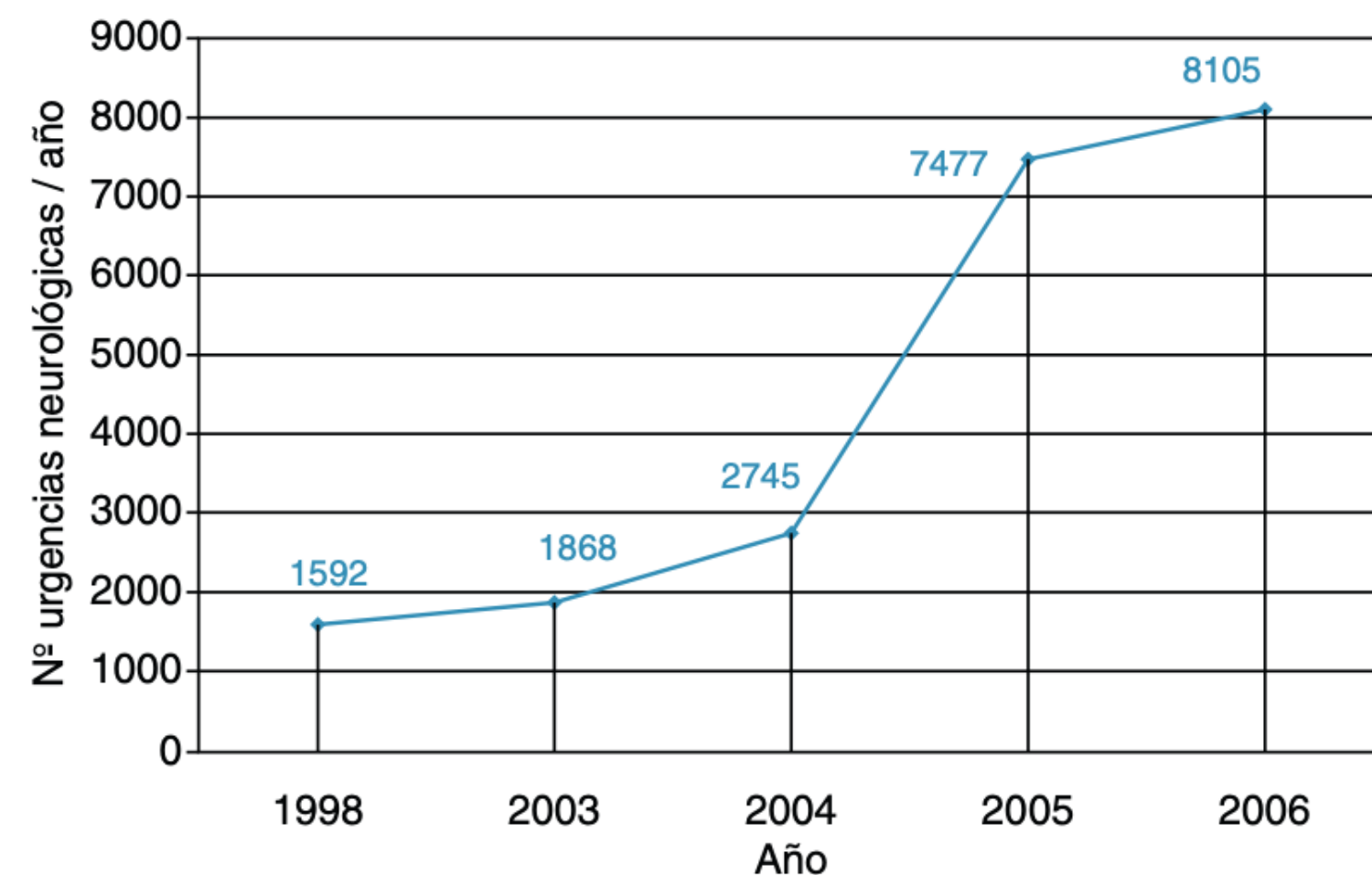


Figura 1 Cifras publicadas de urgencias neurológicas atendidas, anualmente, en diferentes hospitales españoles (los años 2005 y 2006 corresponden al mismo centro hospitalario⁶) a lo largo de los últimos años⁵⁻¹³.



They hate us because they ain't us

TikTok
@drglaucomflecke



MOTIVI - IPOTESI

	Motivo consulenza neurologo	N	%
	Deficit neurologici focali	210	20.98
	Cefalea	127	12.69
2	Perdita transitoria di coscienza	127	12.69
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	Disturbi acuti della visione	45	4.50
	Dolori muscolari	18	1.80
	Coma	15	1.50
3	Febbre e segni neurologici	13	1.30
	Para/tetraplegia	11	1.10
	Disturbi del movimento (iper o ipociniesie)	10	1.00
	Disturbi funzionali/psichiatrici	7	0.70

EMERGENCY DEPARTMENT CONSULTATIONS FOR PATIENTS WITH NEUROLOGICAL EMERGENCIES

Table 1 Chief complaints of consulted patients^a

	Number (%)	95% CI	
Focal weakness	110 (22.0)	18.3	25.7
Headache	91 (18.2)	14.7	21.7
Dizziness/vertigo	80 (16.0)	12.7	19.3
Seizure	71 (14.2)	11.1	17.3
Focal sensory changes	69 (13.8)	10.7	16.9
AMS/coma/lethargy	63 (12.6)	9.6	15.6
Speech difficulties	53 (10.6)	7.8	13.4
Visual changes	39 (7.8)	5.4	10.2
Back pain	27 (5.4)	3.4	7.4
Other ^b	73 (14.6)	5.7	10.7



MOTIVI - IPOTESI

Ipotesi diagnostica	N	%
Ictus ischemico	163	16.28
Attacco ischemico transitorio	95	9.49
Cefalea primaria	84	8.39
Crisi epilettica in epilessia nota	58	5.79
Sincope cardiogena	57	5.69
Vertigine periferica	57	5.69
Prima crisi epilettica	54	5.39
Trauma cranico	45	4.50
Mono-radiculo-plexopatia	43	4.30
Cefalea sintomatica	36	3.60
Disturbo psichiatrico	36	3.60
Delirium in demenza	32	3.20
Vertigine centrale	30	3.00
Sincope neurogena	29	2.90
Encefalopatia metabolica	21	2.10

EPIDEMIOLOGY AND OUTCOMES OF STATUS EPILEPTICUS

Table 1

Worldwide Incidence of Status Epilepticus

Incidence of Status Epilepticus in Various Studies and Countries

Authors	Nation	Study Design	Incidence	Population
DeLorenzo et al 1996 ¹¹	U.S.A.	Prospective	41/100.000	Any age
Hesdorffer et al 1998 ¹²	U.S.A.	Retrospective	18.3/100.000	Any age
Jallon et al 1999 ¹⁰	Switzerland	Prospective	16.3/100.000	Any age
Coeytaux et al 2000 ³	Switzerland	Prospective	9.9/100.000	Any age
Knake et al 2001 ⁸	Germany	Prospective	15/100.000	Any age
Vignatelli et al 2003 ⁵	Italy	Prospective	13.1/100.000	Adults
Vignatelli et al 2005 ⁶	Italy	Prospective	15/100.000	Adults
Govoni et al 2008 ⁷	Italy	Retrospective	27.2/100.000	Any age
Sadarangani et al 2008 ¹⁶	Kenya	Prospective	35/100.000	Children
Bhalla et al 2014 ⁹	France	Prospective	8.52/100.000	Any age
Ong et al 2015 ¹⁴	Taiwan	Retrospective	4.6/100.000	Any age
Tiamkao et al 2015 ¹³	Thailand	Retrospective	5.2/100.000	Any age
Bergin et al 2019 ¹⁷	Auckland	Retrospective	29.3/100.000	Any age
Leitinger et al 2019 ¹⁸	Austria	Retrospective	36.1/100.000	Adults
Rodin et al 2021 ⁴	Denmark	Prospective	10.7/100.000	Adults
Vijjala et al 2021 ⁷²	Switzerland	Prospective	8.6/100.000	Adults

[Michele Ascoli](#),^{1,2} [Edoardo Ferlazzo](#),^{1,2} [Sara Gasparini](#),^{1,2} [Giovanni Mastroianni](#),² [Rita Citraro](#),³ [Roberta Roberti](#),³ and [Emilio Russo](#)³ *Int J Gen Med.* 2021; 14: 2965–2973.





12 FEBBRAIO 2016 GIORNATA INTERNAZIONALE EPILESSIA

SE SAI COME AGIRE NON DEVI AVER PAURA DI UNA CRISI EPILETTICA



TRATTAMENTO DELLO STATO EPILETTICO (FOCALE O GENERALIZZATO) CONVULSIVO NELL'ADULTO
A cura della Commissione Stato Epilettico della Lega Italiana contro l'Epilessia (LICE)

TEMPO	INTERVENTO
0-5 minuti Fase di stabilizzazione	<ul style="list-style-type: none"> Stabilizzare il paziente (ABC, esame neurologico) Calcolare tempo dall'inizio della crisi Monitorare parametri vitali ed ECG, eventualmente O2 terapia Reperire accesso i.v.: Lab con elettroliti (compresi Ca e Mg), esami emato-chimici, ev tassi plasmatici AEDs, ev tox screen. Stick glicemico: se glicemia < 3.6 mmol/L (< 60mg/dL), tiamina (vitB1) 100 mg i.m., poi glucosata 50% <p>SI → Crisi ancora in corso → NO → Osservazione Valutazione Neuro, EEG</p>
5-10 minuti SE iniziale	<p>Scegliere uno dei seguenti trattamenti, bolus i.v. in 2 minuti, ripetibili una volta dopo 5 minuti</p> <ul style="list-style-type: none"> Lorazepam 0.1 mg/kg massimo 4 mg/kg, Ripetibile una volta oppure Diazepam 10 mg i.v. 0.15 - 0.2 mg/kg, massimo 10 mg, ripetibile una volta Midazolam 10 mg i.v. (se peso > 40 Kg), 5 mg (se peso 13-40 Kg) non ripetibile <p>Se non disponibile accesso i.v.:</p> <ul style="list-style-type: none"> Midazolam 10 mg i.m. (se peso > 40 Kg), 5 mg (se peso 13-40 Kg) non ripetibile <p>SI → Crisi ancora in corso → NO → Osservazione Valutazione Neurologica, EEG</p>
10-30 minuti SE definito	<p>Scegliere uno dei seguenti trattamenti, somministrare una sola volta</p> <ul style="list-style-type: none"> Fenitoina i.v. 15-18 mg/kg, eventuali altri 5 mg/kg. Velocità infusione massima: 50 mg/min. NB: grossa vena, accesso indipendente, infusione in fisiologica (NON in soluzione glucosata) ed in corso di monitoraggio ECG oppure uno dei seguenti Ac. Valproico i.v. 20-40 mg/kg, dose massima 3000 mg. Velocità di infusione massima 6mg/Kg/min (10-20 min) Levetiracetam i.v. 40-60 mg/kg, dose massima 4500 mg in fisiologica o glucosata (in 10-20 min) Lacosamide 200-400 mg in singola dose, dose massima 600 mg (in 10-20 min) Fenobarbital 10-15 mg/kg, dose massima 20 mg/kg. Velocità di infusione massima 50 mg/min <p>SI → Crisi ancora in corso → NO → Osservazione Valutazione Neurologica, EEG</p>
> 30 minuti SE refrattario	<p>Stato focale → Stato generalizzato</p> <p>Controindicazioni all'intubazione oro-tracheale</p> <p>Monitoraggio EEG Considerare ripetizione di medicamentazione precedenti</p> <p>Crisi ancora in corso → SI → Intubazione oro-tracheale, ricovero in Terapia Intensiva, monitoraggio EEG, scegliere uno dei seguenti trattamenti: <ul style="list-style-type: none"> Midazolam 0.1-0.3 mg/kg, max 4 mg/min, seguito da 0.2-0.6 mg/kg/h o dose necessaria a sopprimere le scariche epilettiche oppure Propofol bolus di 1-2 mg/kg i.v. ripetibile o infusione continua di 2-12 mg/kg/h oppure Thiopentone bolus di 3-3 mg/kg, seguito da infusione continua di 3-5 mg/kg/h Considerare: Ketamina bolus di 0.5-4 mg/kg, seguito da infusione continua di 0.3-5 mg/kg/h <p>NB: mantenimento terapia anti-epilettica i.v. con: VPA 1-2 mg/kg/h; LEV 3000-4000 mg/die; LCM 200-400 mg/die oppure ripristinare terapia anti-epilettica del paziente NB: per sospensione ridurre dose dell'anestetico del 5% ogni ora. NB propofol > 48h → attenzione al rischio di propofol infusion syndrome</p> <p>NO → Osservazione, Valutazione Neurologica, EEG</p> </p>
> 24 h SE super-refrattario	<p>Osservazione, Valutazione Neurologica, EEG</p>

Controindicazioni:
Fenitoina: Basso Afto-Ventricolare (BAV), grave ipostenione
Acido Valproico: disfunzione epatica, malattie mitocondriali. Possibile tossicità pancreatica e disfunzione plattinica
Levetiracetam: insufficienza renale severa
Lacosamide: BAV di II-III grado
Fenobarbital: insufficienza epatica, depressione respiratoria

Warning:
Midazolam: rischio di accumulo in pazienti obesi, anziani e insufficienza renale
Propofol: rischio di depressione cardio-circolatoria e propofol infusion syndrome
Ketamina: rischio di convulsioni, A.I., fatica, rabdomiolisi, ipertiglicidemia
Thiopentone: rischio di ileo paralitico, immunosoppressione, edema linguale, ipermetabolismo
Ketamina: può indurre tachicardia e ipertensione, ipertensione, aumento pressione intracranica

STESS (Status Epilepticus Severity Score)

Caratteristiche	Punteggio
Consienza	0
Vigilia/sonno/alterato	1
Stuporoso/comatoso	2
Peggiori tipo di crisi	0
Assenza, modificata	1
Parziale semplice, parziale complessa	2
Stato epilettico non convulsivo in coma	3
< 65 anni	0
3-65 anni	1
> 65 anni	2
Anamnesi	0
Sì / No / sconosciuto	1
Totale	

Scala totale > 4 predittivo di prognosi sfavorevole intraspedaliera (Reng. 2014; Ravetti, 2008)

ALLONTANA GLI INDUMENTI ROPPO STRETTI

CERCA DOCUMENTI DI IDENTIFICAZIONE

Non sono da evitare
la bocca
la crisi
liquidi dalla bocca
quando
chiamare l'ambulanza

Con il patrocinio di Federazione Ordini Farmacisti Italiani

oppure

- Thiopentone**
Bolo 1-3 mg/kg, ripetibile. Infusione continua di 3-5 mg/kg/h. Severa depressione respiratoria e cardio-circolatoria, accumulo, allunga i tempi di recupero e di intubazione. Rischio di ileo paralitico, immunosoppressione edema linguale, ipernatremia.

oppure

- Ketamina**
Bolo 0.5-4 mg/kg. Infusione continua di 0.3-5 mg/kg/h. Può indurre tachicardia e altre aritmie inclusa l'astasia, ipertensione arteriosa e aumento della pressione intracranica. Usualmente associata all'infusione continua di un altro anestetico.

zione Ospedaliera
to Epilettico

RE GENERALI

iale 5-10 min

stà vie aeree, monitoraggio para
glicemico, emogas.
so venoso, esami ematochimici

inito 10-30 min

ca e terapia dell'eziologia con i
entali e di laboratorio.
sibile EEG; diagnosi stato epi
convulsivo (SENC), verifica tera
squilibri pressori, metabolici

rattario > 30 min

se convulsivo

- Trasferimento in terapia intensiva, in coma terapeutico (CT).
- Monitoraggio EEG;
- verifica terapia e livello di sedazione

se non convulsivo

- Indicazione al CT discussa; decisioni coinvolte in base alle variabili del caso
- Monitoraggio EEG prioritario.

Super-refrattario > 24 h

- Gestione congiunta rianimatore-neurologo in terapia intensiva.

a cura della Commissione Stato Epilettico

Vedi Position Paper LICE:
www.lice.it/pdf/Position_Paper_120

glucosata. Velocità infusione max 50 mg/min (casualmente in 10-20 min).
Controindicato in BAV di II-III grado.
oppure

- Fenobarbital**
10-15 mg/kg, dose max 20 mg/kg, in fisiologica
Velocità infusione max 50 mg/min
Controindicato in porfiria, insufficienza epatica, severa depressione respiratoria. Monitoraggio cardio-respiratorio durante infusione.



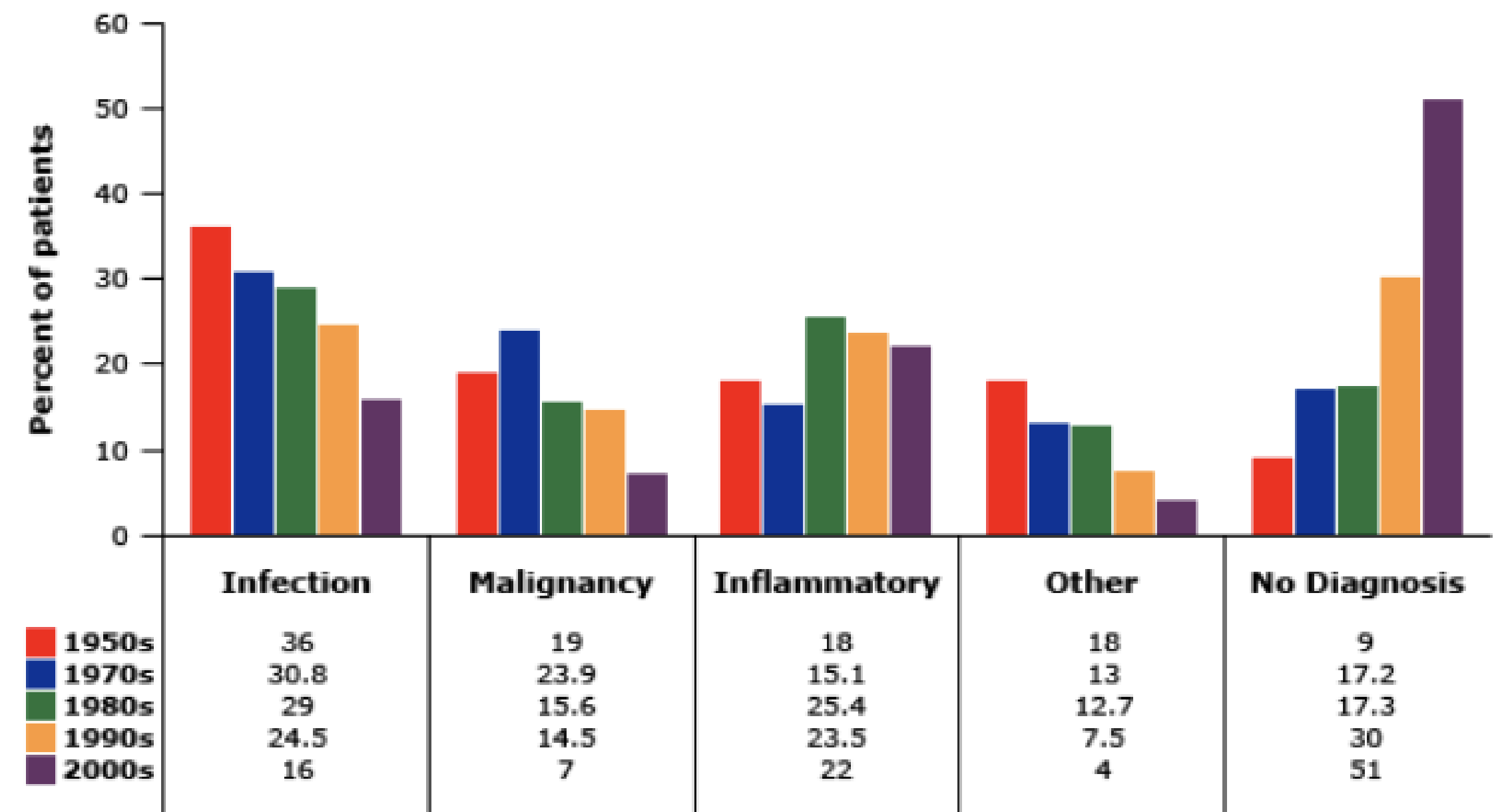
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FUO ...

The percentage of patients with fever of unknown origin by cause during four decades



Adapted from: Mourad O, Palda V, Detsky AS. Arch Intern Med 2003; 163:545.

Biofire FilmArray Meningitis/Encephalitis panel for the aetiological diagnosis of central nervous system infections: A systematic review and diagnostic test accuracy meta-analysis

Juliana Trujillo-Gómez,^{a,b,c} Sofia Tsokani,^d Catalina Arango-Ferreira,^{a,b} Santiago Atehortúa-Muñoz,^{e,f} Maria José Jimenez-Villegas,^{a,b} Carolina Serrano-Tabares,^{a,e} Areti-Angeliki Veroniki,^g and Ivan D. Florez^{a,h,i*}

Interpretation FA/ME may have acceptable-to-high sensitivities and high specificities for identifying bacteria, especially for *S.pneumoniae*, and viruses, especially for HSV-2, and enteroviruses. Sensitivities for *L.monocytogenes*, *H.influenzae*, *E.coli*, and HSV-1 were suboptimal.



FUO...

Fever of unknown origin / L. Attard et al.

Table I. Causes of fever of unknown origin in adults [modified from Cunha *et al.* 2015 (54)].

Main causes of classic FUO in adults			
Infections	NIID	Malignancy	Miscellaneous
<p><i>Bacterial</i></p> <ol style="list-style-type: none"> 1. Subacute endocarditis 2. Abdominal, pelvic and renal abscess 3. Spondylodiscitis 4. Chronic prostatitis 5. Periapical dental abscess 6. Vascular graft infection 7. Extrapulmonary and miliary tuberculosis 8. Typhoid fever 9. Bartonellosis 10. Borreliosis 11. Brucellosis 12. Non-tuberculous mycobacteria 13. Q fever 14. Whipple disease 15. Actinomycosis 16. Syphilis 17. Listeriosis <p><i>Viral</i></p> <ol style="list-style-type: none"> 1. CMV 2. EBV 3. Multicentric Castleman's disease <p><i>Fungal</i></p> <ol style="list-style-type: none"> 1. Histoplasmosis (disseminated) <p><i>Parasitic</i></p> <ol style="list-style-type: none"> 1. Visceral leishmaniosis 2. Malaria 3. Toxoplasmosis 4. Amoebic abscess 	<ol style="list-style-type: none"> 1. AOSD 2. Polymyalgia rheumatica/giant vessels arteritis 3. Sarcoidosis 4. Polyarteritis nodosa 5. Systemic lupus erythematosus 6. Rheumatoid arthritis 7. Small vessels vasculitis 8. Takayasu's arteritis 9. Kikuchis' disease 10. Polyarticular gout 11. Behçet's disease 12. Late-onset rheumatoid arthritis 	<ol style="list-style-type: none"> 1. Lymphoma (HL, NHL) 2. Solid tumours (renal cell carcinoma, hepatocellular carcinoma, tumour metastatic to the liver) 3. Myelodysplastic syndrome 4. Leukaemia 5. Atrial myxoma 6. CNS tumours 	<ol style="list-style-type: none"> 1. De Quervain thyroiditis 2. Drug fever 3. Factitious fever 4. Inflammatory bowel diseases 5. Sweet syndrome 6. Deep vein thrombosis/pulmonary embolism 7. Hypersensitivity pneumonia 8. Schnitzler syndrome 9. Hemophagocytic syndrome <p><i>Hereditary AutoInflammatory Diseases (AIDs)</i></p> <ol style="list-style-type: none"> 1. Familial Mediterranean fever (FMF) 2. Tumour necrosis factor receptor-associated periodic syndrome (TRAPS) 3. Cryopyrin-associated periodic syndromes (CAPS) 4. Mevalonate kinase deficiency (MKD)

AOSD: Adult onset Still's disease; CMV: cytomegalovirus; EBV: Epstein-Barr virus; FUO: fever of unknown origin; HL: Hodgkin's lymphoma; NHL: non-Hodgkin's lymphoma; NIID: non-infectious inflammatory diseases.

SINCOPE

Europace Advance Access published June 24, 2015



Europace
doi:10.1093/europace/euv115

EHRA POSITION PAPER

Syncope Unit: rationale and requirement – the European Heart Rhythm Association position statement endorsed by the Heart Rhythm Society

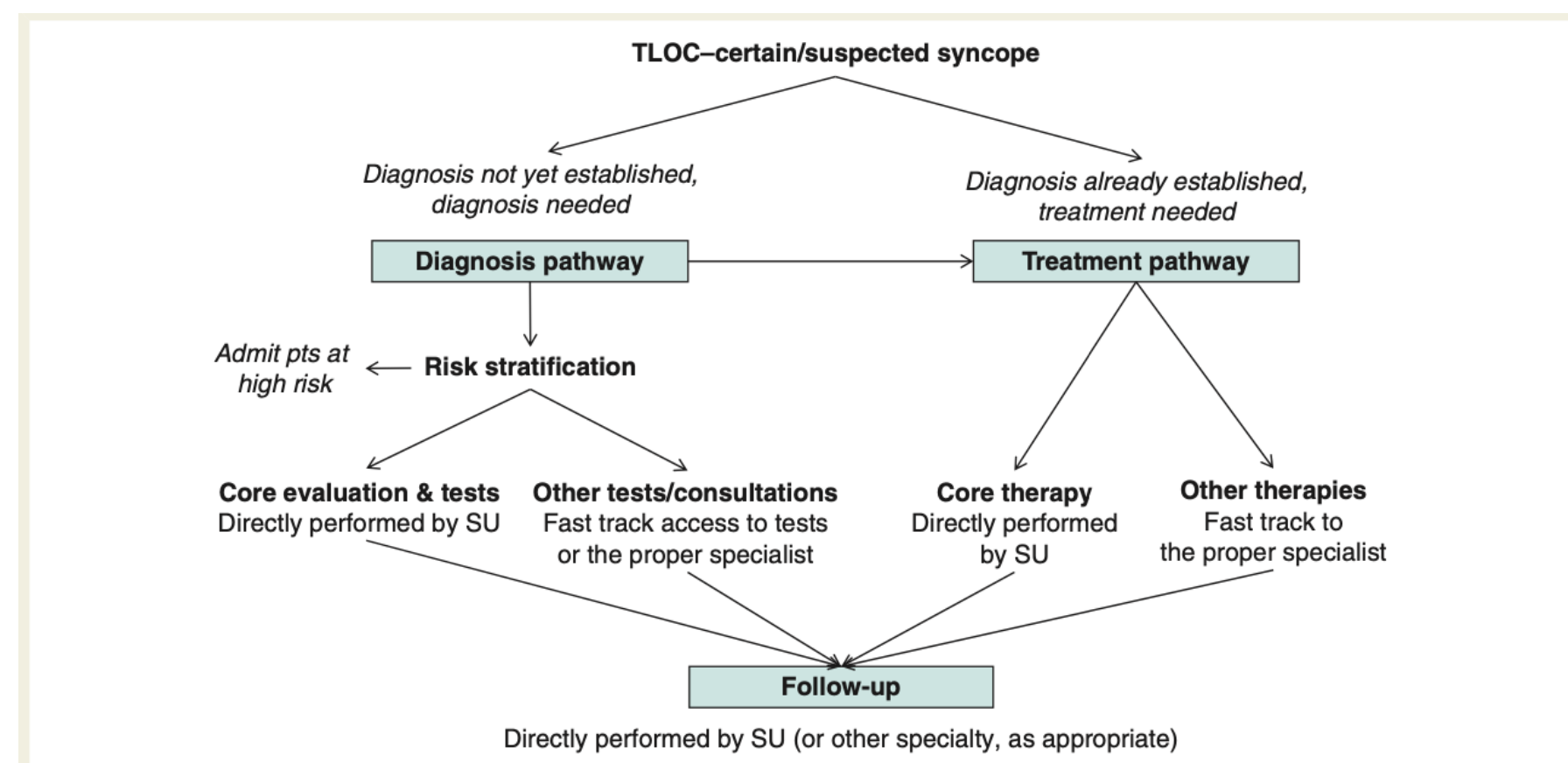


Figure 1 Framework for a comprehensive management of patients with T-LOC of certain/suspected syncopal nature referred to the SU. Core evaluation and therapy depend on each model of care delivery, with a minimum acceptable set described in *Consensus Statement 1*.





CLINICAL STATEMENTS AND GUIDELINES

2017 ACC/AHA/HRS Guideline for the Evaluation and Management of Patients With Syncope: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society

A systematic review found that EEG, CT, MRI, and carotid ultrasound were ordered in 11% to 58% of patients with a presentation of syncope.⁷⁸ The evidence suggests that routine neurological testing is of very limited value in the context of syncope evaluation and management; the diagnostic yield is low, with very high cost per diagnosis.

Recommendations for Neurological Diagnostics (Table view)

COR	LOE	Recommendations
Ia	C-LD	Simultaneous monitoring of an EEG and hemodynamic parameters during tilt-table testing can be useful to distinguish among syncope, pseudosyncope, and epilepsy. ^{229,241-243}
See Online Data Supplement 16.		Although a thoughtful and detailed history usually suffices to distinguish among convulsive syncope, epileptic convulsions, and pseudosyncope, an EEG is particularly important when a diagnosis cannot be established after a thorough initial evaluation. EEG findings are characteristic if an episode can be induced during the tilt-table testing. ²⁴¹⁻²⁴³ Epileptiform discharges are recorded during epileptic convulsions whereas, during syncope, an EEG generally shows diffuse brainwave slowing with delta waves and a flat line pattern. ²⁴³ Pseudosyncope and psychogenic nonepileptic seizures are associated with a normal EEG. ²²⁹
III: No Benefit	B-NR	MRI and CT of the head are not recommended in the routine evaluation of patients with syncope in the absence of focal neurological findings or head injury that support further evaluation. ^{78,240}
See Online Data Supplement 16.		Syncope is due to global cerebral hypoperfusion, and brain structural abnormalities are rare. Nonetheless, MRI and CT are frequently used and infrequently helpful. In 5 studies investigating patients with syncope, MRI was used in 11% of 397 patients and established a diagnosis in only 0.24%. Similarly, in 10 studies of investigation of syncope, CT was used in 57% of 2728 patients and established a diagnosis in only 1%. ^{77,78,256,257,260} Given the cost and impact on health service facilities, MRI and CT should not be routinely used in the assessment of syncope. Neurological imaging may be indicated if significant head injury as a result of syncope is suspected. Although there is general concern about potential radiation-mediated harm from CT, there are very limited data on the actual harm from CT for syncope evaluation.
III: No Benefit	B-NR	Carotid artery imaging is not recommended in the routine evaluation of patients with syncope in the absence of focal neurological findings that support further evaluation. ^{77,78,256,257,260}
See Online Data Supplement 16.		Syncope is due to global cerebral hypoperfusion and therefore not to unilateral ischemia. A review of 5 studies of carotid artery ultrasound and Doppler use in patients with syncope found that these modalities were used in 58% of 551 patients and established a diagnosis in 0.5%. ^{77,78,256,257,260} Carotid artery ultrasound should not be routinely used in the assessment of syncope.
III: No Benefit	B-NR	Routine recording of an EEG is not recommended in the evaluation of patients with syncope in the absence of specific neurological features suggestive of a seizure. ^{36,77,254-258}
See Online Data Supplement 16.		EEGs are ordered frequently for the evaluation of syncope. A review of 7 studies of use of an EEG in patients with syncope found that it was used in 52% of 2084 patients and established a diagnosis in 0.7%. ^{36,77,254-258} EEGs should not be routinely used in the assessment of syncope.

Struttura

Foligno-DEA

contusione
polso dx ve
ustione da
grado

Foligno-DEA

Escoriazio
capelluto
escoriata
ginocchio

Foligno-DEA

Frattura
destro

Foligno-DEA

trauma c

Foligno-DEA

sincope

INDICATORI

Diabete mellito tipo1, tiroidite di hashimoto

-cadute improvvise senza pdc.

-dolori lombari con rigidità arti inferiori.

-GAD +++



MEDICINA

1. Partecipazione (meglio se informale)
2. Integrazione (PDTA, sincope)
3. Comunicazione (poster, pieghevoli)
4. Risorse (filmarray, slot EEG)
5. Aggiornamento (ECM, seminari)

**NEUROLOGY: WHERE PASSION
FUELS PROMISE**

