

SALA POLISSENA B

EMERGENZE NEUROLOGICHE

Moderatori: Rosa Intermite- Vincenzo Natale

Giuseppe Lauria

Come inquadrare la cefalea acuta?

Cefalea in Pronto Soccorso

Appunti e riflessioni



Dott. Giuseppe Lauria
Medicina d'Urgenza - Cuneo

Conflitti di interessi

Economici..



Conflitti interiori.....

Alcuni....

Per chiarezza...

- Non è una relazione su tutte le forme di cefalea
- Non fornirò «certezze»
- Focalizzerò la mia (e spero vostra) attenzione sul problema della diagnosi
- Cercherò di fornire alcuni consigli pratici maturati dalle evidenze (poche) disponibili, e dall'esperienza(!)



"Esperienza" è il nome che
tutti danno ai propri
errori.

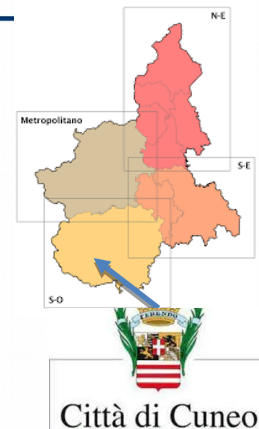
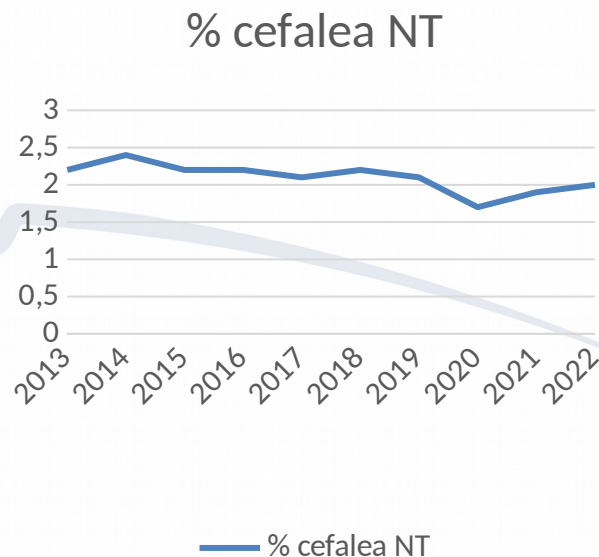
Oscar Wilde

66 Frasi-Celebri

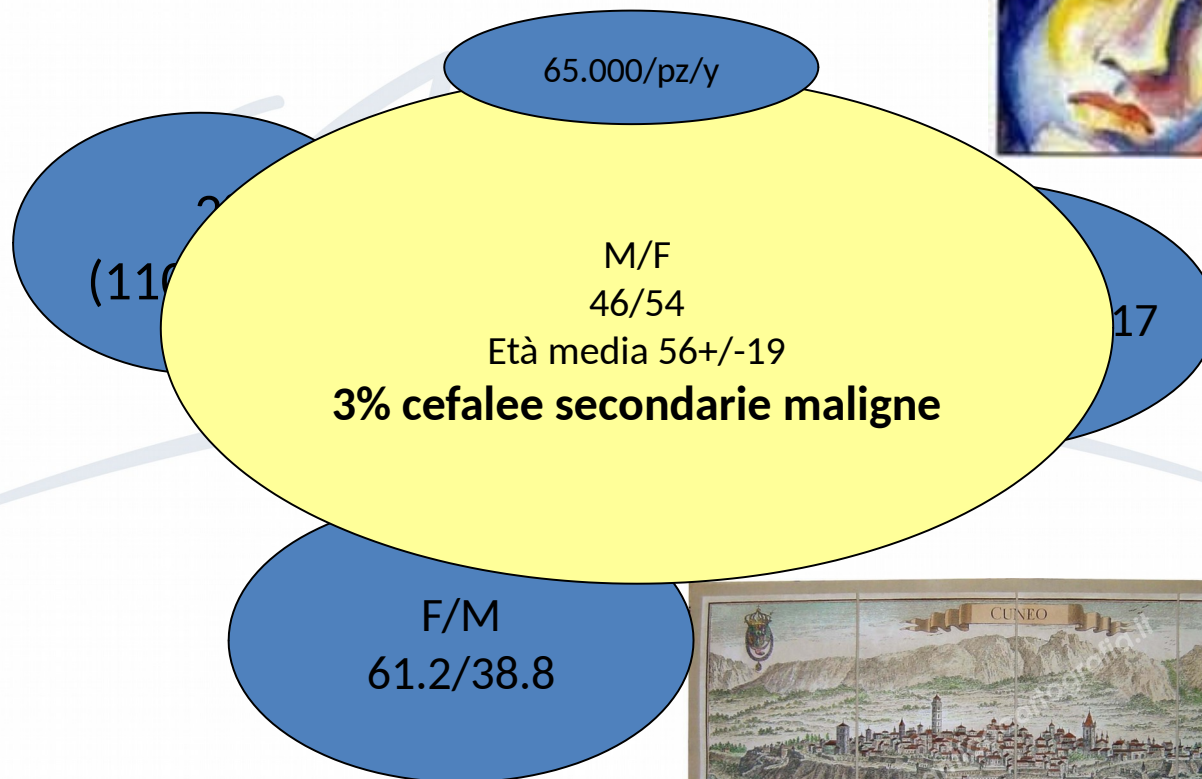
Il problema...

- La letteratura... 
- La cefalea non traumatica rappresenta il 5% degli accessi in PS
- La probabilità di cefalea secondaria è del 2-5% del totale delle cefalee

- In un DEA di II livello



Cefalea in P.S.



CEFALEA in DEA

NON DIMISSIBILI

Emorragia subaracnoidea (ESA)

Meningo-encefaliti

Trombosi venosa cerebrale

Diss. carotidea/vertebro-basilare

Intossicazioni (CO)

Glaucoma acuto

Arterite temporale

Encefalopatia ipertensiva

Pre-eclampsia

Neurite ottica

2018/2021

Ricoveri

6,84%

Ischemia cerebrale

Neoplasie / POS

Altro

NCH: 2,23%

Neurologia: 3,75%

M.Inf.: 0,4%

Altri: 0,5%



**Dimissione a
rischio 0**



Diagnosi

Obiettivi



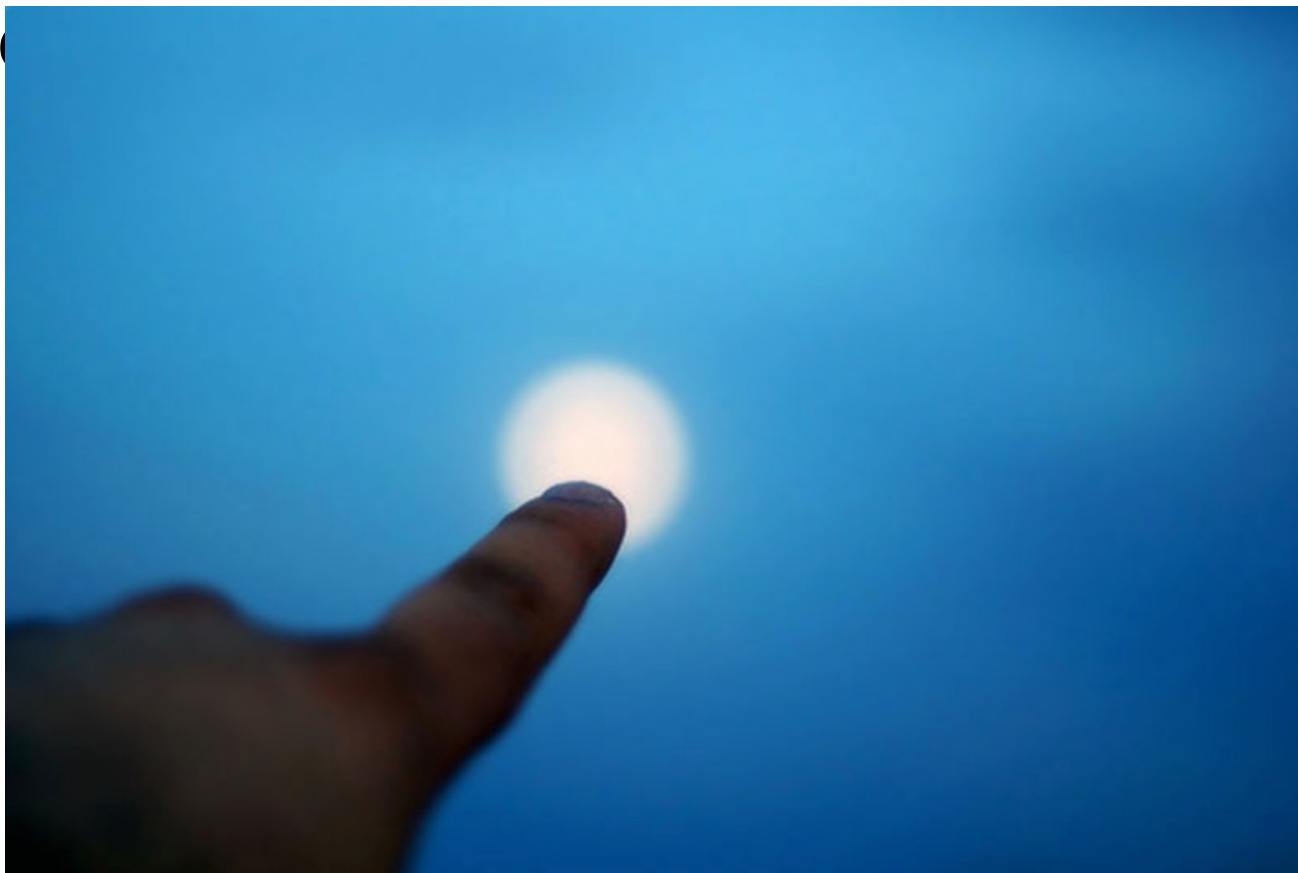
Rassicurazione e sollievo dal dolore

CEFALEA in DEA

DIMISSIBILI

Emicrania / cef. primitive
Patologie ORL / Odontostom.
(sinusopatia)
Patologie internistiche

Medic



Classificazione Internazionale delle Cefalee

Headache Classification Committee
of the International Headache Society (IHS)
The International Classification of Headache Disorders

Definizioni

- Cefalea primaria
 - Emicrania (varie forme)
 - Cefalea Tensiva
 - Cefalee Autonomico Trigeminali
 - Altre cefalee Primarie

- Cefalee Secondarie

- Correlata a Trauma

- Patologia vascolare cranica-vertebrale

- Patologia non vascolare

- Da abuso/sospensione di sostanze

- Cefalea da infezione

- Cefalea da disturbo dell'omeostasi

- Cefalea da patologia ORL/oft...

- Cefalea da disturbo psichiatrico

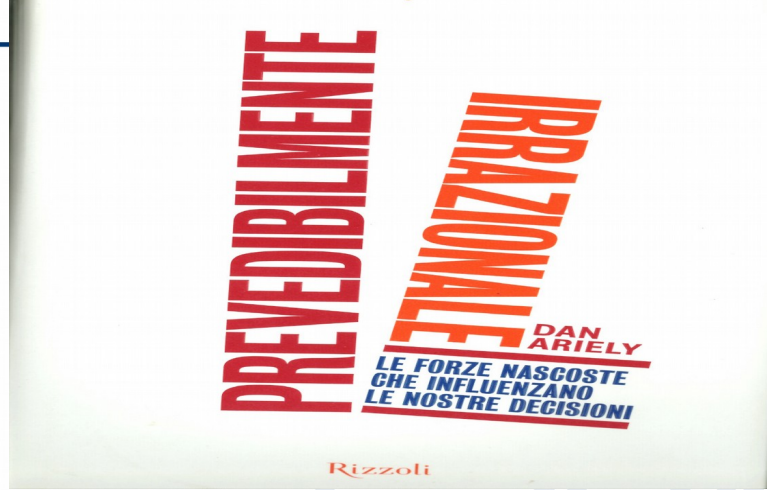
Emorragia SubAracnoidea (ESA)
Meningo-Encefaliti
Emorragia Cerebrale (ICH)
Ischemia cerebrale
Ematoma Subdurale
Intossicazione da CO
Dissezione Carotidea/Vertebrobasilare
Trombosi Venosa Cerebrale
Glaucoma Acuto

Neoplasie – LOS
Arterite Temporale
Neurite Ottica
Encefalopatia Ipertensiva
Eclampsia
Vasocostrizione cerebrale reversibile

E' niente... Ho trovato l'ago nel pagliaio







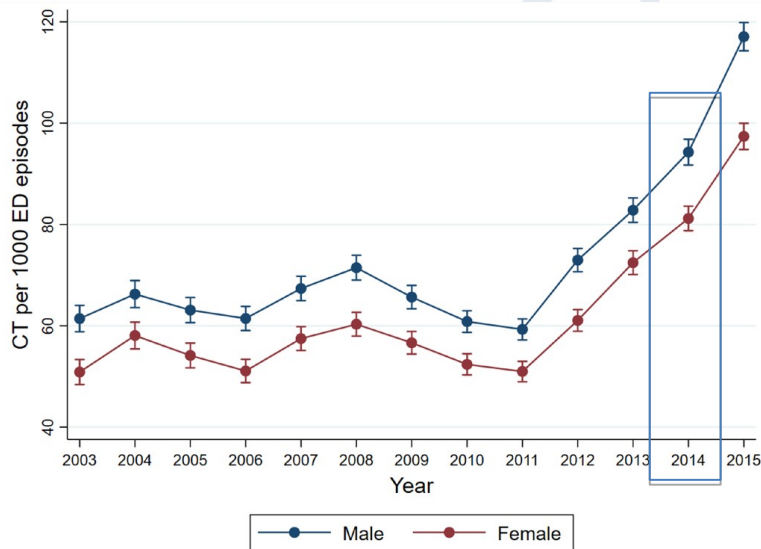
Emergency Physician Perceptions of Medically Unnecessary Advanced Diagnostic Imaging

80% dei tests sono in eccesso
70% timore di "missing diagnosis"
65% contenzioso medico legale

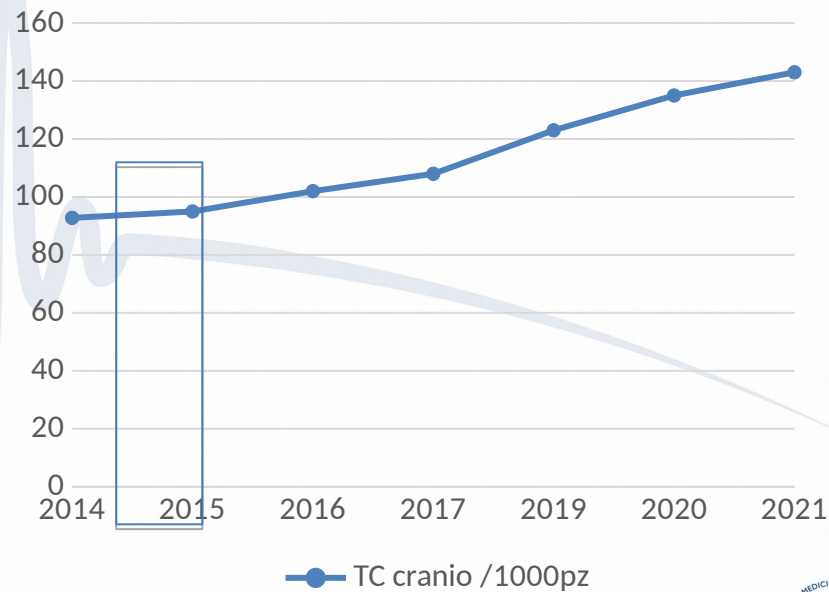
- Pressioni "esterne"
- Turn over degli operatori
- Minor "visibilità" del percorso

TC x 1000 accessi

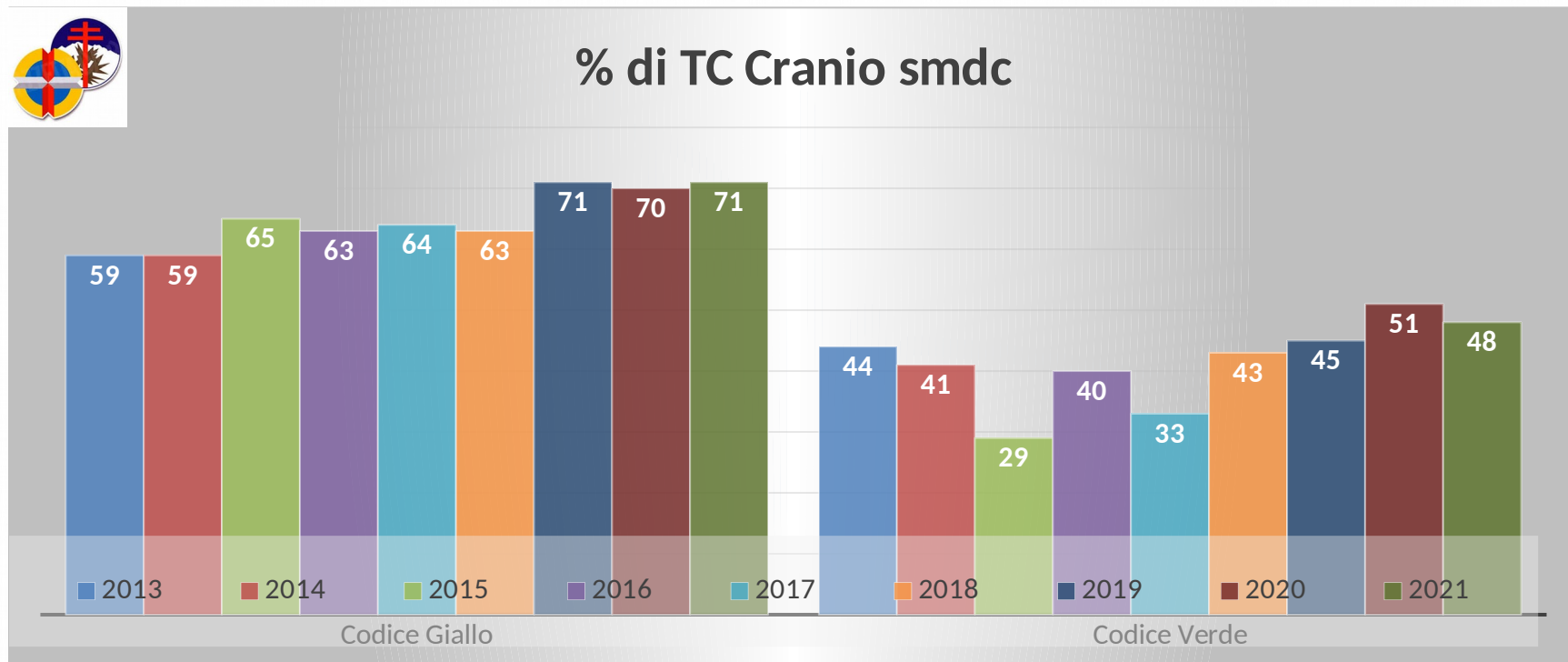
Australia



TC cranio /1000pz

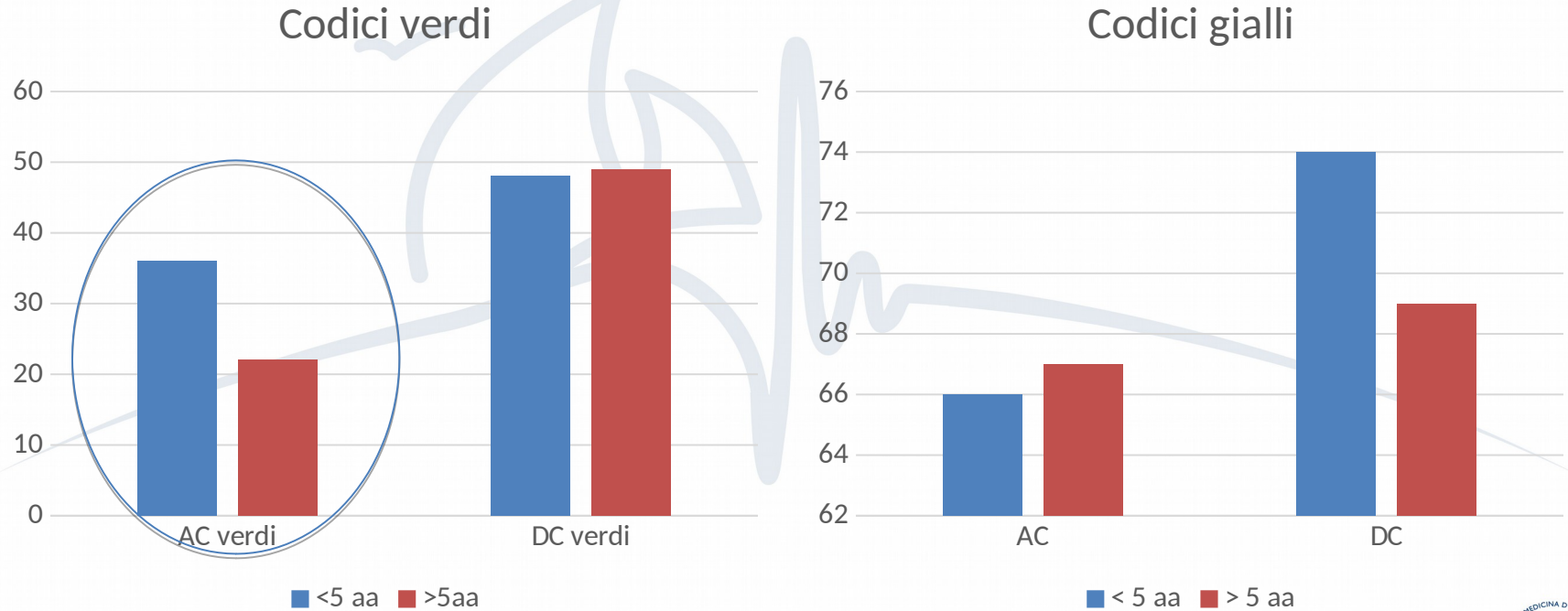


Richieste TC Cranio smdc – cefalea



Dati letteratura 17-33% dei pazienti: Ann.Em.Med.2019.

% richiesta TC per anzianità di servizio pre-post pandemia





Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department With Acute Headache

CRITICAL QUESTIONS

1. In the adult ED patient presenting with acute headache, are there risk-stratification strategies that reliably identify the need for emergent neuroimaging?

Topics

1. Età
2. Storia clinica
3. Presenza di sintomi generali
4. Farmaci
5. Caratteristiche della cefalea
 - Modalità di insorgenza
 - Tempo
 - Localizzazione
 - analogie

- Obiettività
 - Presenza di segni focali...



– NEGATIVA



1. Età

elderly individuals [5]. The majority of the headaches in the elderly are primary disorders (66 %) [6] (Fig. 1). However, headaches from serious causes are more common in those over age 65 and can comprise up to 15 % of new-onset headaches, significantly increased from an estimated 1.6 % for those under age 65 [7]. The headache types, presentation, and treatment options also change with advancing age. The

10x

Table 5. Odds ratios (ORs) of criteria items in the general and nested populations.

	<i>P</i> value	ORs (95% CI)
<i>General population (n = 350)</i>		
Age >60 years	0.076	2.11 (0.93–4.78)
Headache with nausea and vomiting	0.662	1.25 (0.46–3.43)
Headache with vomiting	0.29	2.01 (0.55–7.39)
New onset focal neurologic deficit	0.003	2.88 (1.42–5.84)
RLS ≥ 2	0.004	3.31 (1.46–7.47)
<i>Nested population (n = 118)</i>		
Age ≥ 60 years	0.998	–
Headache with nausea and vomiting	0.999	–
Headache with vomiting	0.999	–
New onset focal neurologic deficit	0.039	4.09 (1.08–15.53)
RLS ≥ 2	0.028	4.50 (1.18–17.15)

Table 1
SNOOP4 mnemonic (Dodick 2010)

	Symptoms to Assess for	Secondary Causes to Consider:
Systemic symptoms	Fever, chills, night sweats, myalgias, weight loss, malignancy history, immunocompromised state	Vasculitis, CNS infection, metastatic malignancy
Neurologic symptoms	Unilateral weakness, diplopia, gait changes, speech changes, personality/behavior changes	CNS neoplasm, inflammatory lesion, infection or vascular disease
Sudden Onset (“thunderclap”)	Sudden severe pain	SAH, RCVS, venous thrombosis, arterial dissection
Onset after age 50	New headaches later in life	CNS neoplasm, vasculitis, inflammatory disease, infection
Pattern change/progressive	Worsening of previous headache patterns	Base on review of other SNOOP4 symptoms
Valsalva Precipitation	Headache triggered with straining or coughing	CSF flow obstruction, elevated intracranial pressure
Postural aggravation	Worse with lying down	Elevated intracranial pressure
Papilledema	Transient visual obscurations, double vision, visual field loss	Elevated intracranial pressure, hydrocephalus, CSF flow obstruction

Adapted from Dodick DW. Pearls: headache. *Semin Neurol.* 2010;30(1):74-81.

Età = FR per cefalea secondaria

**Comparison of Headache Types by Age
Presenting for Tertiary Headache Evaluation**

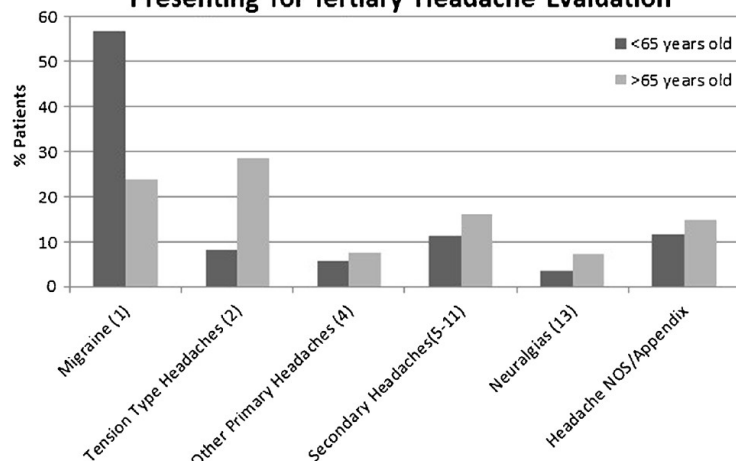


TABLE 2. Secondary Headache Disorders in Older Adults

Secondary headache disorder	Red flag
Cerebrovascular ischemic event (stroke)	Sudden onset of focal neurologic deficits; headache is more common for strokes in the posterior vs anterior circulation
Intracranial hemorrhage (epidural, subdural, subarachnoid, or parenchymal)	Thunderclap headache; "worst headache of life"; focal neurologic deficits; depressed level of consciousness; presence of anticoagulation
Cerebral neoplasm	Typically, subacute onset of focal neurologic deficits; papilledema
Posttraumatic headache	Head trauma
Giant cell arteritis	Systemic symptoms; scalp tenderness; jaw claudication; visual changes; associated with polymyalgia rheumatica
Cardiac cephalgia	Headache precipitated by exertion
Headache attributable to sleep apnea	Morning headache; history of sleep apnea
Headache attributed to subacute glaucoma	Headache in dimly lit conditions
Cervicogenic headache	Headache exacerbated by neck movement
Medication overuse headache	Polypharmacy

Curr Neurol Neurosci Rep (2015) 15: 30

2. Storia clinica

However, the most important feature among the key clues explained above is that if comorbidity is present, age is over 50 years, and trigger factor is present, then the patient has a 9.33-fold increased risk of secondary headache ($p = 0.032$)

J Headache Pain (2008) 9:89–97
DOI 10.1007/s10194-008-0015-0

- Patients who are pregnant, immunocompromised, elderly, or have known malignancy have higher risks of secondary disorders therefore.

Preeclampsia

Preeclampsia is considered in the newly hypertensive patient after 20 weeks' gestation up to 6 weeks postpartum and affects approximately 5% of all pregnancies.⁹²

Cerebral vein and sinus thrombosis (CVT) is a rare form of stroke that can occur at any age with a mean age of approximately 40 years.⁶³ Oral contraceptive use (especially in obese patients) and thrombophilia are common risk factors for development of CVT.⁶⁴ Several additional risk factors have been identified, including pregnancy and

3. Sintomi associati

Table 1

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A prospective, observational study with 90 patients^b from Thailand using SNOOP4 for detection of serious causes of secondary headaches showed a high negative predictive value (96.4%) but a ~~low~~ positive predictive value (25.9%) for serious causes



MENINGITIS SYMPTOMS



Fever



Sleepiness



Headache



Light sensitivity

The classic triad of altered mental status, fever, and neck stiffness is present in only 44% of cases.⁸⁴ However, 99% of patients with bacterial meningitis will have at least 1 of these 3 classic symptoms, and 95% present with 2 of the following: headache, fever, neck stiffness, altered mental status.⁸⁴ Many patients with bacterial meningitis have preceding ear, sinus, or lung infections.⁸⁵

4. FARMACI

Anticoagulant treatment as a risk factor for primary intracerebral haemorrhage

R Fogelholm, K Eskola, T Kiminkinen, I Kunnamo

The estimated age adjusted odds ratio of being on anti-coagulant treatment at the time of primary intracerebral haemorrhage was 6-7 (95% CI from 4*5 to 9.9). The risk was highest during the first year of anticoagulation.



Table 2

Vasoactive compounds associated with RCVS

ESA- ICH

Drug Categories	Examples of Offending Drugs
Drugs of abuse	Cannabis, cocaine, amphetamines, LSD
Antidepressants	Selective serotonin reuptake inhibitors and selective norepinephrine reuptake inhibitors like fluoxetine, paroxetine, duloxetine and venlafaxine
Alpha sympathomimetics	Enteral or nasal decongestants like ephedrine and pseudoephedrine, norepinephrine
Triptans	Sumatriptan, rizatriptan, frovatriptan
Ergot alkaloid derivatives	Methergine, bromocriptine, lisuride
Others	Intravenous immunoglobulin, interferon, nicotine patches, ginseng, binge drinking, phenytoin



THUNDERCLAP HEADACHE

The most well-known worrisome headache pattern is the thunderclap headache, typically associated with aneurysmal SAH. Given the high degree of morbidity and mortality associated with SAH, the emphasis is appropriately placed on its rapid and accurate diagnosis.

Subarachnoid Hemorrhage

The majority of patients presenting with SAH in a recent study reported that their headache reached peak intensity within 1 second of onset, a so-called apoplectic headache.⁶ Eighty percent of patients with a SAH stated that their headache had peaked in intensity within 1 minute. In contrast, of patients presenting with headaches unre-

Reversible Cerebral Vasoconstriction Syndrome

RCVS should be considered in all patients presenting with thunderclap headache, especially if the headache is recurrent. The headache onset can be very rapid, as in SAH, but the headaches tend to be shorter, lasting 1 to 3 hours¹³ and often include a moderate headache between recurrent exacerbations, as opposed to the headache of SAH, which often persists for days or weeks in our clinical experience.

Cerebral Venous Sinus Thrombosis

CVST is traditionally associated with subacutely progressive headache, but can present with a thunderclap headache in a minority of cases. Risk factors for CVST include an underlying hypercoagulable state, head injury, exogenous estrogens through contraceptive pills, and pregnancy.¹⁶



Table 1
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Adapted from Dodick DW. Pearls: headache. *Semin Neurol.* 2010;30(1):74-81.



Figure. Ottawa Subarachnoid Hemorrhage Rule.⁸⁸



Headache at the emergency room: Etiologies, diagnostic usefulness of the ICHD 3 criteria, red and green flags

Joe Munoz-Ceron^{1,2@*}, Varinia Marin-Careaga^{1,3@}, Laura Peña^{1‡}, Jorge Mutis^{4‡}, Gloria Ortiz^{1‡}

Table 4. Factors associated with primary Headaches.

Variable	PR	CI 95%	p
History of Migraine	2.9	2.1–3.9	0.03
History of similar episodes	2.7	2.3–3.3	0.02
Fulfilling ICHD 3 B criteria	18.7	7.1–30.3	<0.001

6. American College of Emergency Physicians. Clinical policy: critical issues in the evaluation and management of patients presenting to the emergency department with acute headache. *Ann Emerg Med.* 2002;39(1):108-122.



Table 6. Criteria for Low-Risk Headaches

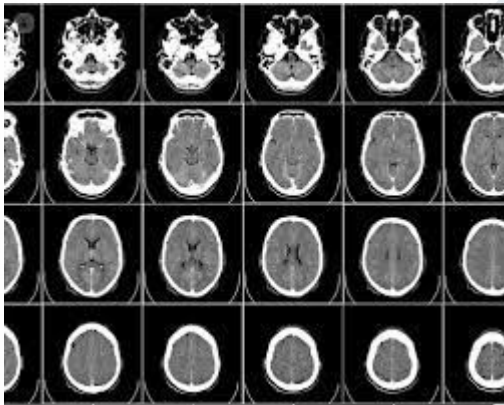
Age younger than 30 years
Features typical of primary headaches (Tables 1 through 5)
History of similar headache
No abnormal neurologic findings
No concerning change in usual headache pattern
No high-risk comorbid conditions (e.g., human immunodeficiency virus infection)
No new, concerning historical or physical examination findings (Table 7)

Information from reference 6.

3. In the adult ED patient presenting with acute headache, does a normal noncontrast head CT scan performed within 6 hours of headache onset preclude the need for further diagnostic workup for SAH?

- Selected patients will no longer need to be subjected to LP or CTA as a part of ruling out an SAH.

TAC Encefalo Normale





shutterstock.com • 1398763643

ESA: La sensibilità della TC decade di circa il 10% fra le 6 e le 12 ore,
E fino al 30% dopo 2- 3 gg.

NB with nonenhanced CT. The sinus CVT may appear to be hyperattenuating, which is a finding present in only 20%–25% of cases (49,50).

Chiewvit P, Piyapittayanan S, Pongvarin N. Cerebral venous thrombosis: diagnosis dilemma. *Neurol Int* 2011;3(3):e13.

4. In the adult ED patient who is still considered to be at risk for SAH after a negative noncontrast head CT, is CTA of the head as effective as LP to safely rule out SAH?

Level C recommendations. Perform LP or CTA to safely rule out SAH in the adult ED patient who is still considered to be at risk for SAH after a negative noncontrast head CT result.

CVT patients with isolated headache who present early (<7 days) are more at risk to deteriorate neurologically



negative predictive value was 99.8 % (95 % CI: 98.9–100 %) (Fig. 3). After D-dimer determination there is a 0.2 % chance of CVT in patients with isolated headache and a negative D-dimer. The prevalence of CVT in this group with isolated headache was 7.5 %. There is a 6.9 % post-test reduction of the chance of having CVT in patients with normal neurological examination after D-dimer determination.

We defined patients to have a low risk of CVT when they had a normal neurological examination and normal standard head CT. The definition of a normal neuro-

D-dimer for the exclusion of cerebral venous thrombosis: a meta-analysis of low risk patients with isolated headache

Imanda M.E. Alons^{1*}, Korné Jellema¹, Marieke J.H. Wermer² and Ale Algra^{3,4,5}

Table 3 Data on 636 patients with isolated headache

	CVT		No CVT	
	<i>D-dimer raised</i>	<i>D-dimer normal</i>	<i>D-dimer raised</i>	<i>D-dimer normal</i>
Tardy et al., 2002	6	0	0	17
Kosinski et al., 2004	20	0	27	244
Meng et al. 2014	15	1	2	155
Alons et al., 2015	3	0	63	83
Total	44	1	92	499

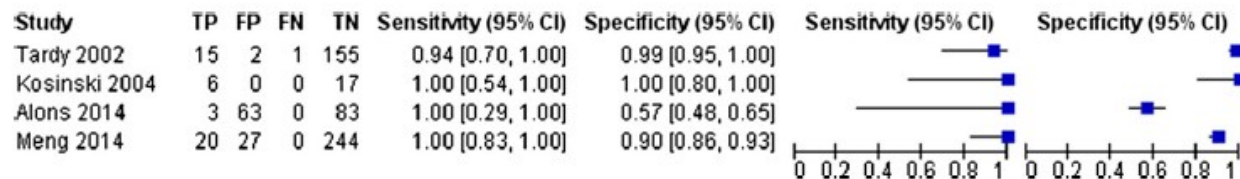


Fig. 3 Overview of the sensitivity and specificity of the included articles

Conclusion

D-dimers have a high negative predictive value in patients with isolated headache for excluding CVT.

Meningiti – meningo-encefaliti

Leucocitosi – PCr+ PCT +/-

Trombosi dei seni venosi

D-Dimero



Arterite Temporale

The erythrocyte sedimentation rate and C-reactive protein should be checked and although neither is specific, the C-reactive protein is more sensitive (95%–98% vs 77%–86%).⁵⁶

VES – PCR+ - PCT-

TAC cranio negativa: OCCHIO!



Glaucoma

- Dolore monolaterale
- Iperemia oculare
- Scatenato dal buio
- Associato a vomito
- Riduzione del visus
- Età > 50 aa



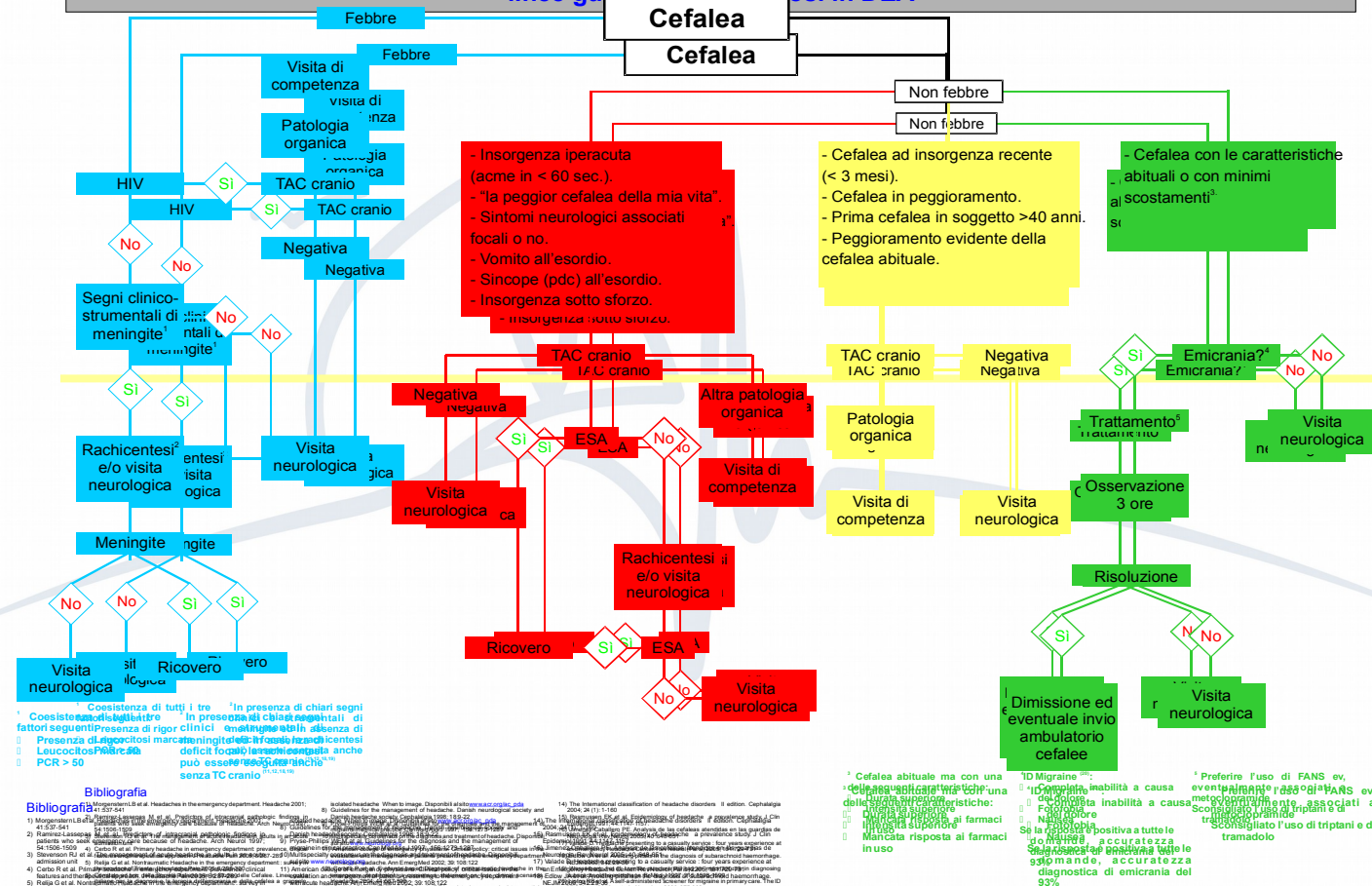


PDTA

- 
- ERRORE = ZERO**
- Individuare le cefalee “secondarie”
 - Emorragia cerebrale
 - Meningite
 - Tumori
 - Trombosi
 - Ischemie
 - Aneurismi
 - Disturbi del midollo spinale
 - Disturbi del collo
 - Disturbi del cuore
 - Disturbi della radiologia
 - Disturbi delle manovre invasive
 - Disturbi delle consulenze specialistiche
 - Aumento della durata dei ricoveri



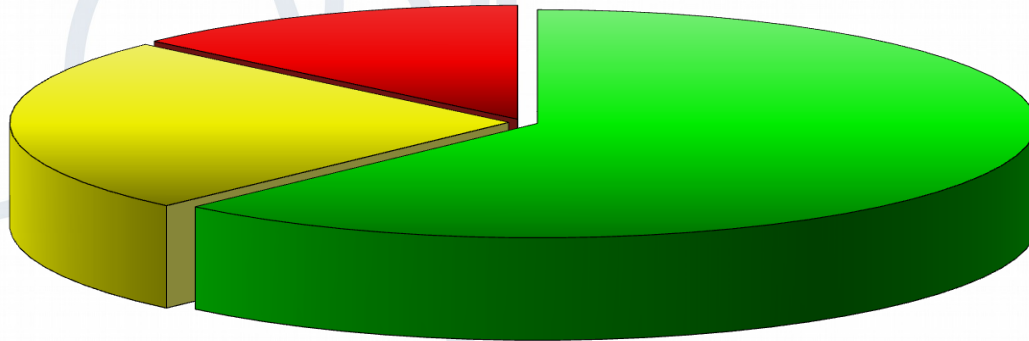
linee guida per la diagnosi in DEA

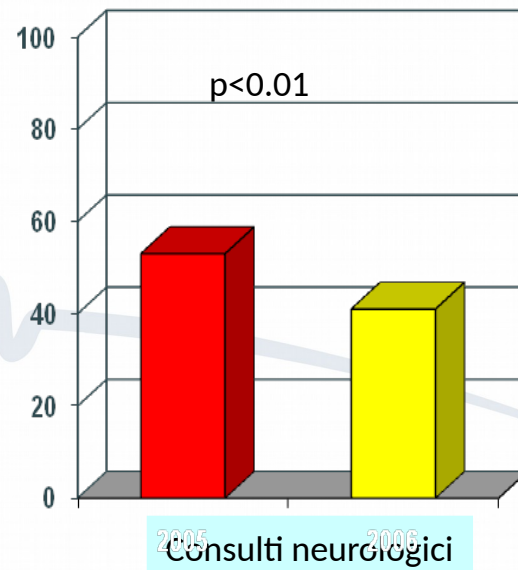
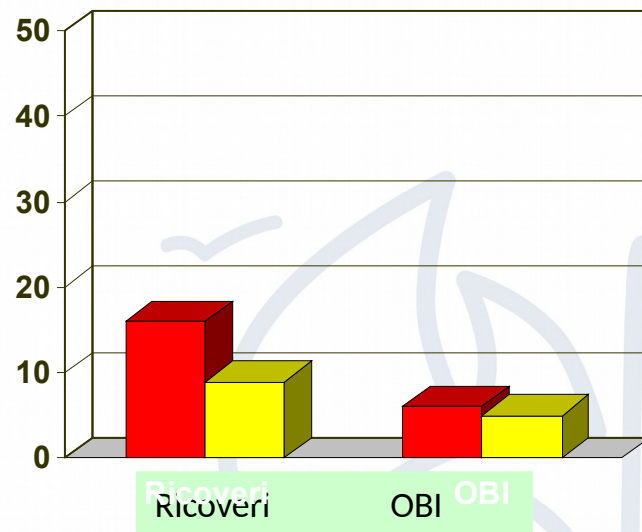




Nontraumatic Headaches in the Emergency Department: Evaluation of a Clinical Pathway

Dutto L, Meineri P, Tartaglino B, Lauria G et al. Headache 2009, 49(8): 1174-85





A.D.2000
Visit
compe

- [illegible]





- Valuta con attenzione i soggetti sopra i 50 anni;
- Considera i fattori di rischio (patologia/farmaci/gravidanza);
- Fai le domande giuste: cerca le red flags!
- Non fidarti della scomparsa del dolore;
- Se la TC è negativa pensa al tempo (>6 ore!) e alle diagnosi alternative ---> Chiama l'esperto (in modo consapevole)
- Usa gli esami appropriati per escludere le patologie evolutive
- Assicura la paziente un follow up certo;
- Non omettere una PL nel sospetto di infezione SNC;
- Ricorda che esistono anche le cefalee primarie.....



Grazie per l'attenzione

Dott. Giuseppe Lauria

