x congresso nazionale
simeu
NAPOLI 17-20 NOVEMBRE 2016

L'appropriatezza in medicina d'urgenza

Roberta Petrino
EUSEM president
Presidente SIMEU Regione Piemonte e Valle d'Aosta

Come facciamo a ridurre i costi della salute migliorando l'outcome?

riducendo l'utilizzo di cure che non portano un reale beneficio

Lo spettro dell'appropriatezza per gli interventi sanitari

Futile | **Non Appropriato** | **Appropriato** | **Necessario**

Muir Graj JA. Churchill Libisngstone 2001

Questo esame o procedura darà risposta alla giusta domanda, migliorerà l'outcome del paziente ed è coerente con la volontà e il destino del paziente stesso

Una sanità giusta

L’inappropriatezza costa (soldi)

1) Esami di controllo inutili (troponine ripetute 19€ l’una, D-Dimeri ripetuti 10,05€ l’uno)
2) Imaging inutile, spesso conseguente a richieste di esami inappropriate (TC torace con mdc, 187€ …)
3) Consulenze inutili (30€ l’una **più** il ritorno ai punti 1 e 2)
4) Tempi di permanenza e/o osservazione prolungati (rivalutazione clinica 20€, monitoraggi. SpO_2 10 €, ECG 54 €, PA 48 € …)

fonte costi: *Tariffario Regionale Prestazioni* 2012

L’inappropriatezza costa (salute)

- Dilata i tempi d’attesa e di permanenza – pericolo!
- Danni da imaging inutile:
  - rischio oncogenetico da radiazioni ~ 1:2000[1], (fino a ~ 1:200 per una CT total body a 20 aa)[2]
  - ADR da mdc nel 3% (mortalità 1:13000)[3]
- Aumenta il rischio di infezioni nosocomiali
  (aumentando il tempo di esposizione alle stesse)

[1] Picano E. Economic and biological costs of cardiac imaging. *Cardiovascular Ultrasound*. 2005;3:13.

[2] Huang B, Law MW, Khong PL. Whole-body PET/CT scanning: estimation of radiation dose and cancer risk.. *Radiology*. 2009 Apr;251(1):166-74.

[3]Pasternak JJ, Williamson EE. Clinical Pharmacology, Uses, and Adverse Reactions of Iodinated Contrast Agents: A Primer for the Non-radiologist. *Mayo Clinic Proceedings*. 2012;87(4):390-402.

Factors that increase test ordering

Patient-oriented

– Seeking best outcomes of care

– Responding to patient and family requests

– Practice guidelines or care pathways

Sociocultural

– Tradition

Time efficiency-driven

– Productivity targets (it is faster to 'just order the test' or order multiple tests 'in parallel' rather than 'in series')

– Unavailability of prior test results (faster to repeat a test than track down results)

Risk aversive

– Fear of medicolegal liability

—defensive medicine'

Newman-Toker DE, et al. BMJ Qual Saf 2013;22

Factors that decrease test ordering

Patient-oriented

– Medical futility

– Risks of complications from testing

– Practice guidelines

Sociocultural

– Peer pressure

– Public awareness campaigns (eg, ‘Choosing wisely’)

Time efficiency-driven

– Unavailable locally

– Difficult to order

– Long delay for result

Cost containing

– Fear of medicolegal liability

—payer policies

Newman-Toker DE, et al. BMJ Qual Saf 2013;22

Come «pecchiamo» di inappropriatezza?

Laboratorio

Imaging

Consulenze

Trattamenti

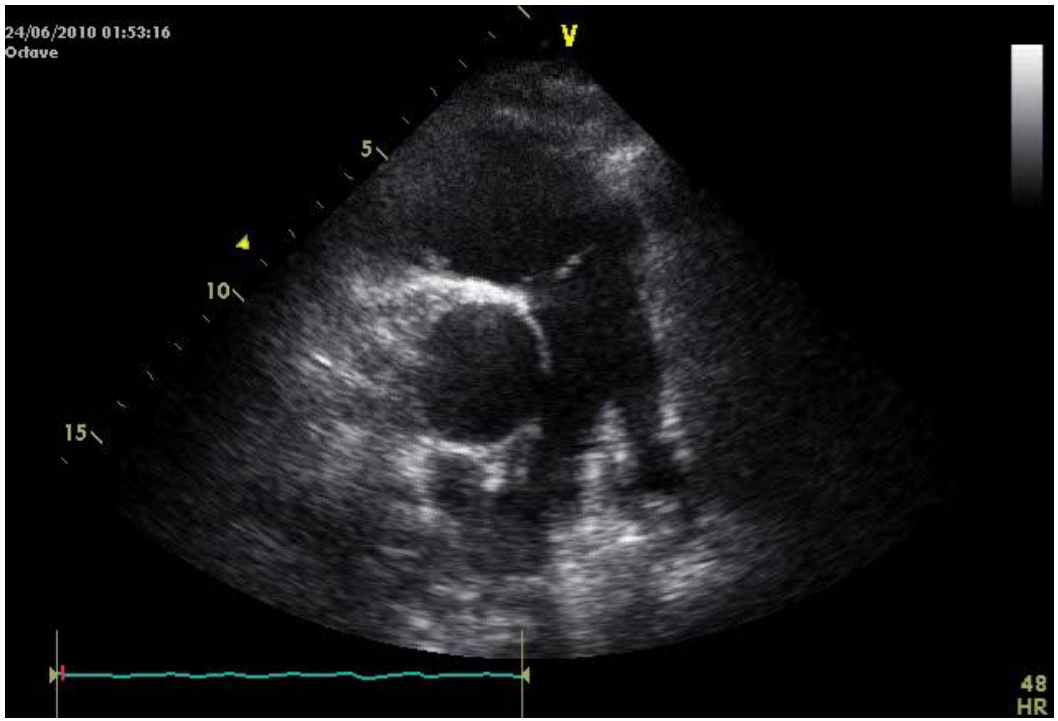
Esami di Laboratorio

- Donna, 41, giunge per sincope senza prodromi
- PA 100/60, FC 125, SPO2 93% AA, fr 32, TC 36,4° C
- APR ipertensione lieve (beta-bloccante), fumatrice, sovrappeso
- Da 3 gg tornata da New York
- Triage: codice **ROSSO**

- EO tachipnoica, FLC sovraorbitaria a seguito della caduta, non angor

Quali esami facciamo?

- **Emogasanalisi arteriosa**
  - pH: 7,42
  - pCO_2: 29.5 mmHg
  - pO_2: 65.1 mmHg
  - Sat O_2: 93.1 %
  - P/F: 310



D-Dimero: croce dell'urgentista (e delizia dello specialista…)

x congresso nazionale simeu
NnapoLI 17-20 novembre 2016

European Heart Journal
doi:10.1093/eurheartj/ehu283

ESC GUIDELINES

2014 ESC Guidelines on the diagnosis and management of acute pulmonary embolism

The Task Force for the Diagnosis and Management of Acute Pulmonary Embolism of the European Society of Cardiology (ESC)

Endorsed by the European Respiratory Society (ERS)

Authors/Task Force Members: Stavros V. Konstantinides* (Chairperson) (Germany/Greece), Adam Torbicki* (Co-chairperson) (Poland), Giancarlo Agnelli (Italy), Nicolas Danchin (France), David Fitzmaurice (UK), Nazzareno Galiè (Italy), J. Simon R. Gibbs (UK), Menno V. Huisman (The Netherlands), Marc Humbert† (France), Nils Kucher (Switzerland), Irene Lang (Austria), Mareike Lankeit (Germany), John Lekakis (Greece), Christoph Maack (Germany), Eckhard Mayer (Germany), Nicolas Meneveau (France), Arnaud Perrier (Switzerland), Piotr Pruszczyk (Poland), Lars H. Rasmussen (Denmark), Thomas H. Schindler (USA), Pavel Svitil (Czech Republic), Anton Vonk Noordegraaf (The Netherlands), Jose Luis Zamorano (Spain), Maurizio Zompatori (Italy)

European Heart Journal (2014) 35, 2873–2926
doi:10.1093/eurheartj/ehu281

ESC GUIDELINES

2014 ESC Guidelines on the diagnosis and treatment of aortic diseases

Document covering acute and chronic aortic diseases of the thoracic and abdominal aorta of the adult

The Task Force for the Diagnosis and Treatment of Aortic Diseases of the European Society of Cardiology (ESC)

Authors/Task Force members: Raimund Erbel* (Chairperson) (Germany), Victor Aboyans* (Chairperson) (France), Catherine Boileau (France), Eduardo Bossone (Italy), Roberto Di Bartolomeo (Italy), Holger Eggebrecht (Germany), Arturo Evangelista (Spain), Volkmar Falk (Switzerland), Herbert Frank (Austria), Oliver Gaemperli (Switzerland), Martin Grabenwöger (Austria), Axel Haverich (Germany), Bernard Iung (France), Athanasios John Manolis (Greece), Folkert Meijboom (Netherlands), Christoph A. Nienaber (Germany), Marco Roffi (Switzerland), Hervé Rousseau (France), Udo Sechtem (Germany), Per Anton Sirnes (Norway), Regula S. von Allmen (Switzerland), Christiaan J.M. Vrints (Belgium).

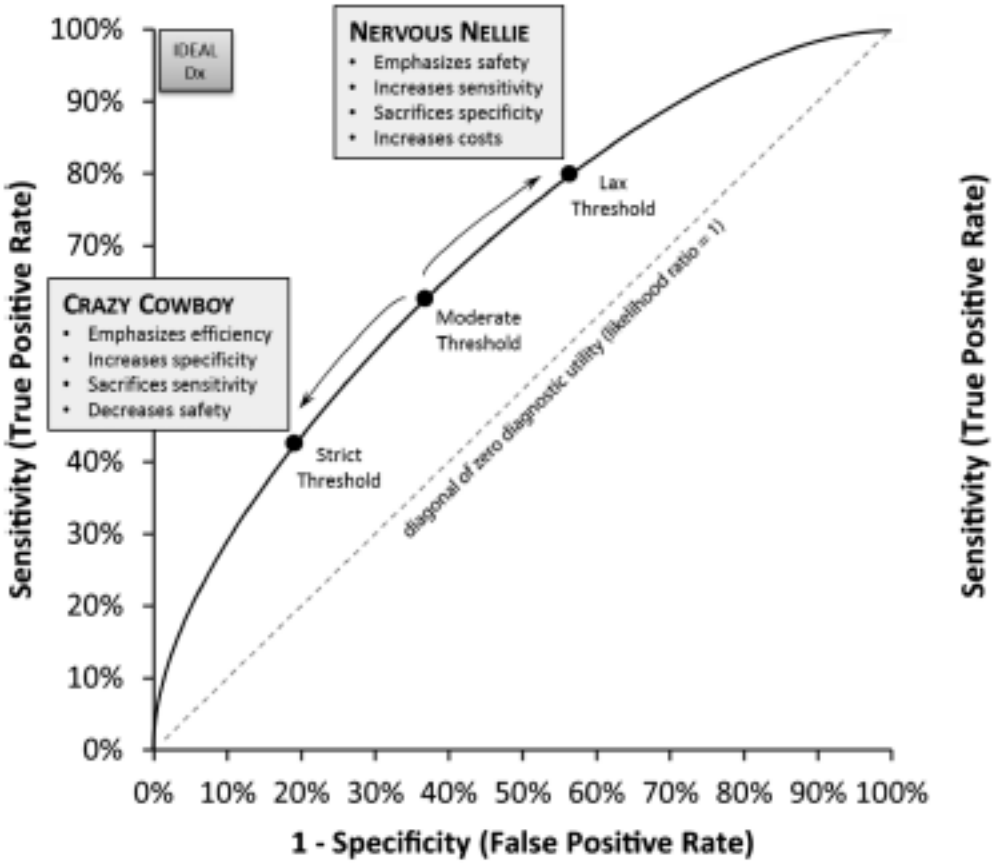
Il costo dell'inappropriatezza

Nel nostro PS vediamo mediamente 1500 pazienti con dispnea e 1400 con dolore toracico all'anno:

- D-Dimero di routine per tutti costerebbe 29.145 €/anno
- BNP di Routine per ogni dispnea? 37.500 €/anno
- Troponina per tutti? 55.970 €/anno

se poi aggiungo anche le sincopi

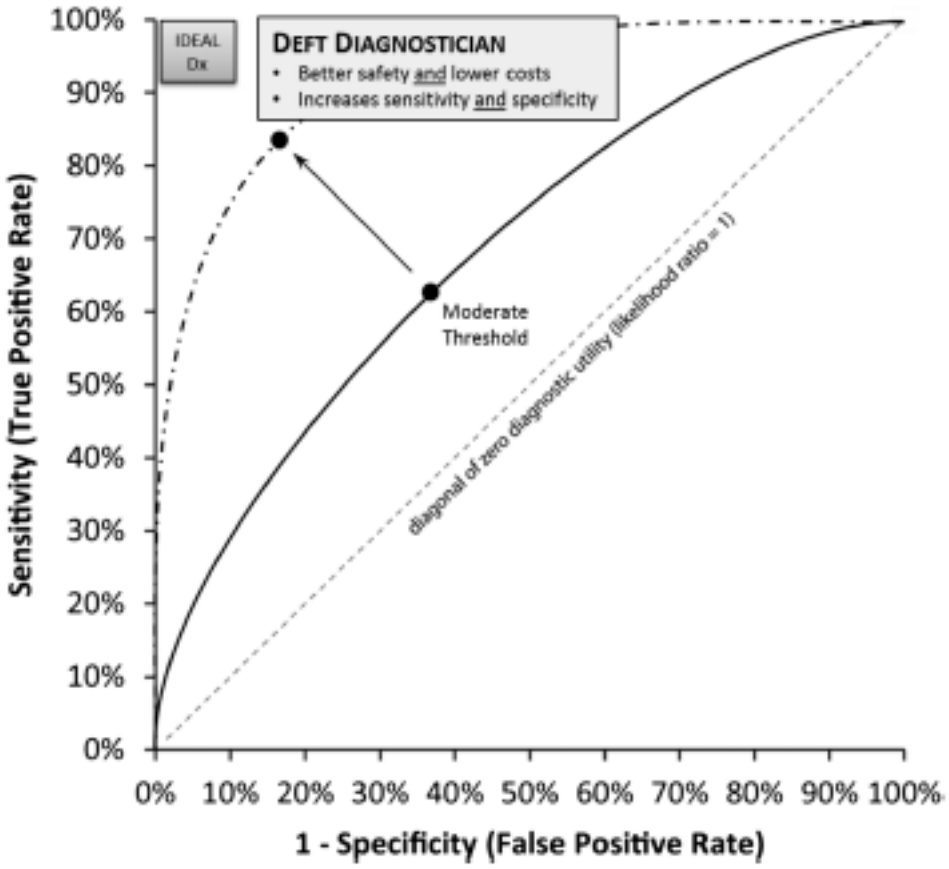
500/anno, troponina + d-dimero per tutti? 14675 €/anno



Sensitivity (True Positive Rate)

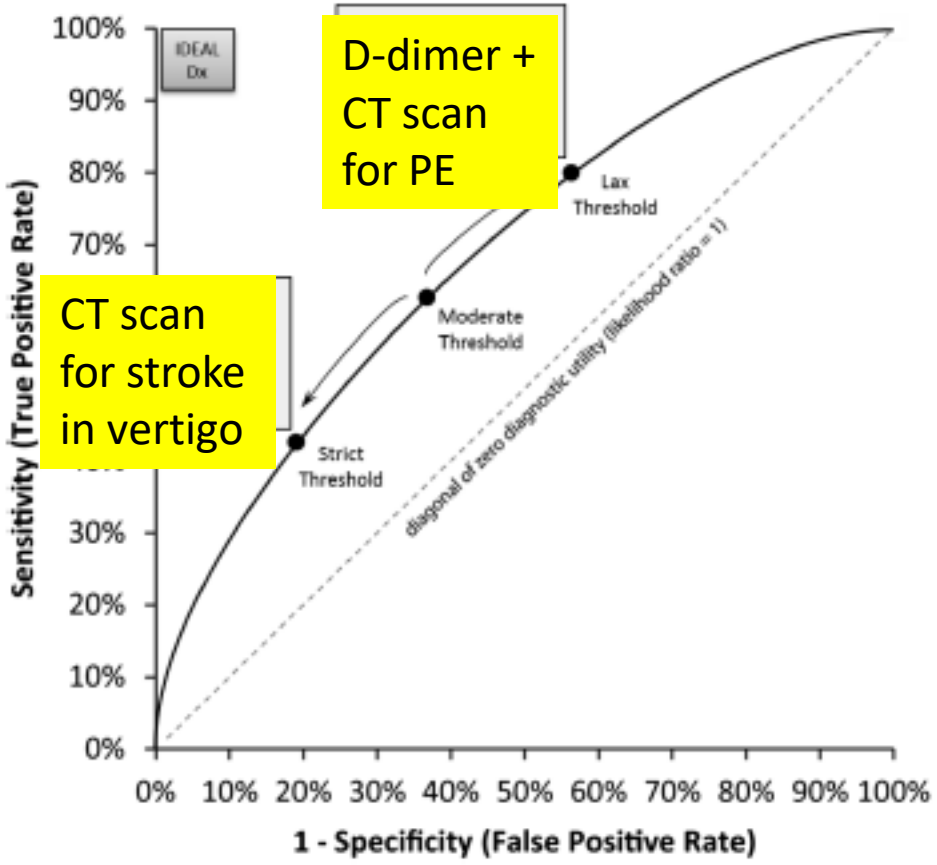
Performance tradeoffs (sliding lungo la ROC curve). I medici modificano a soglia per una determinata diagnosi ma non migliorano la loro performance diagnostica globale

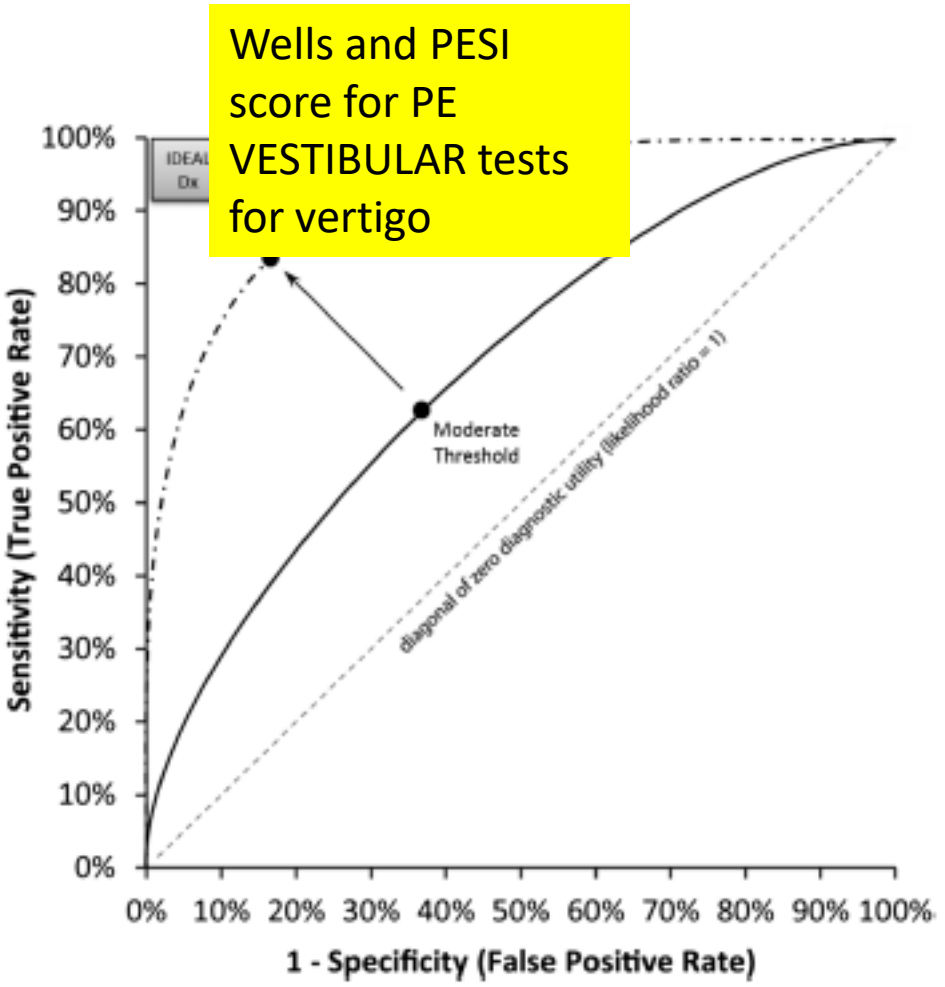
Newman-Toker DE, et al. BMJ Qual Saf 2013;22



Miglioramento della performance (moving the ROC curve). I clinici modificano la loro accuratezza diagnostica anzichè sempicemente modificare la soglia decisionale in una combinazione di "qualità" e "produttività"

Newman-Toker DE, et al. BMJ Qual Saf 2013;22


D-dimer + CT scan for PE
CT scan for stroke in vertigo
IDEAL Dx
Lax Threshold
Moderate Threshold
Strict Threshold
diagonal of zero diagnostic utility (likelihood ratio = 1)
Sensitivity (True Positive Rate)
1 - Specificity (False Positive Rate)
100%
90%
80%
70%
30%
20%
10%
0%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%


Wells and PESI score for PE
VESTIBULAR tests for vertigo
IDEAL Dx
Moderate Threshold
diagonal of zero diagnostic utility (likelihood ratio = 1)
Sensitivity (True Positive Rate)
1 - Specificity (False Positive Rate)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Richieste di consulenze

Caso clinico

Al triage….

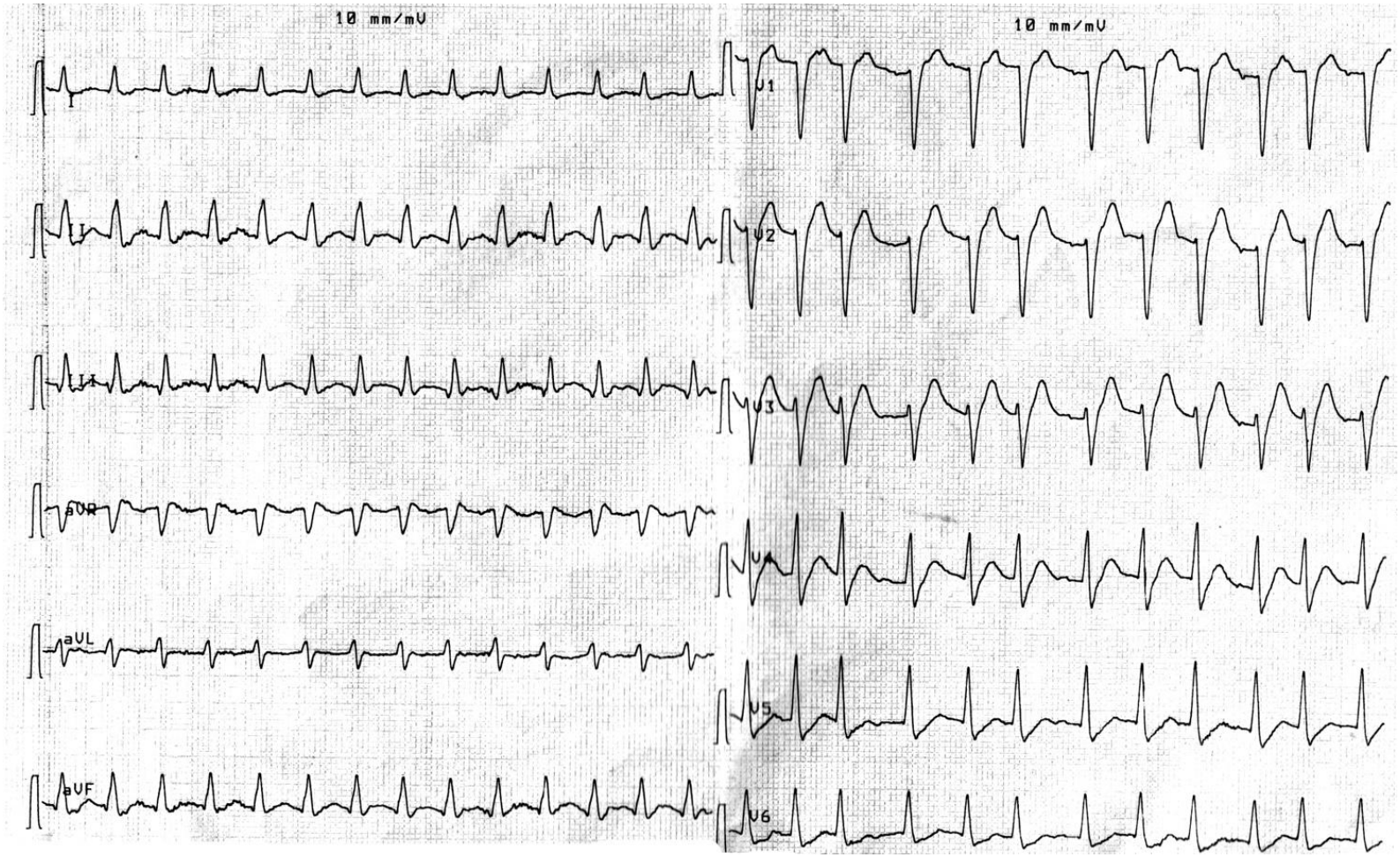
68-anni, pallido, sudato, riferisce cardiopalmo e dolore toracico da 2 ore.

emodinamicamente Instabile (HR 160, BP 80/40, RR 20, SpO2 91%)

Anamnesi muta

No Allergie

Triage ECG



Inviato a refertare al cardiologo

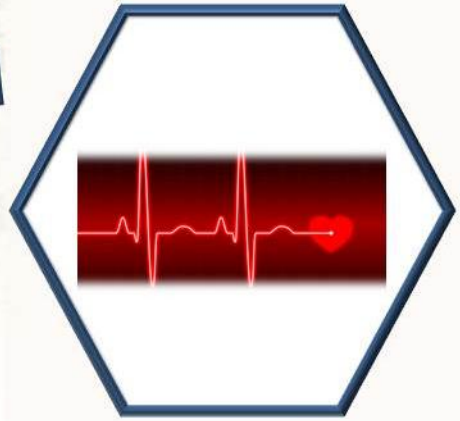
Il cardiologo referta la FA

Se ne ha voglia si informa sul fatto che è instabile, sennò aspetta che glielo dica il medico di PS

Dice quindi: "occorre fare la cardioversione, chiamate l'anestesista"

E il medico del PS?


PROPOFOL



Trattamenti – caso clinico

x congresso nazionale simeu NAPOLI 17-20 NOVEMBRE 2016

- Donna, 68 anni, giunge per crisi ipertensiva
- PA 190/110, FC 95, SpO2 99%, FR 15, TC 36° C
- Lamenta modesta cefalea da ieri, no angor, no dispnea.
- Triage: codice **GIALLO**
- APR muta eccetto sovrappeso corporeo
- Nessuna terapia, no allergie
- EO generale ed EON nella norma

Quali esami facciamo? **Quale terapia?**

Trattamenti

È una emergenza ipertensiva???

- EPA iperteso
- Eclampsia
- Dissezione aortica
- ESA
- Encefalopatia ipertensiva

Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients in the Emergency Department With Asymptomatic Elevated Blood Pressure

From the American College of Emergency Physicians Clinical Policies Subcommittee (Writing Committee) on Asymptomatic Hypertension:
Stephen J. Wolf, MD (Subcommittee Chair)
Bruce Lo, MD, RDMS
Richard D. Shih, MD
Michael D. Smith, MD
Francis M. Fesmire, MD (Committee Chair)

ACEP 2013

1. In ED patients with asymptomatic elevated blood pressure, does screening for target organ injury reduce rates of adverse outcomes?

Patient Management Recommendations

Level A recommendations. None specified.
Level B recommendations. None specified.
Level C recommendations. (1) In ED patients with asymptomatic markedly elevated blood pressure, routine screening for acute target organ injury (eg, serum creatinine, urinalysis, ECG) is not required.

2. In patients with asymptomatic markedly elevated blood pressure, does ED medical intervention reduce rates of adverse outcomes?

Patient Management Recommendations

Level A recommendations. None specified.
Level B recommendations. None specified.
Level C recommendations. (1) In patients with asymptomatic markedly elevated blood pressure, routine ED medical intervention is not required.

E la cefalea?

Headache and hypertension: refuting the myth

D Friedman

Why does the hypertension headache myth persist?

Patients often tell their physicians, "I know when my blood pressure is high because I get a headache". The relation of headache to hypertension has been debated in the medical literature for almost a century. Janeway observed it in a large clinical study of hypertensive patients (systolic blood pressure > 160 mm Hg) in 1913.[1] He described the "typical" hypertensive headache as non-migrainous, present upon awakening and resolving during the morning. However, his illustrative case histories are somewhat misleading because they all had malignant hypertension and systolic pressures > 230 mm Hg. Additionally, one patient was likely in analgesic rebound.

There are several reasons why the "hypertension headache" misperception persists: hypertension may be an epiphenomenon of acute pain, headache is associated with hypertensive encephalopathy as a manifestation of increased intracranial pressure, and headache is a side effect of some antihypertensive treatments. Conversely, many of the antihypertensive medications are also effective for headache prevention, so the risk of concurrent headache may be low unless the influence of treatment is considered.

The Physicians' Health Study prospectively examined 22 701 American male physicians aged 40–84 years, who were randomly assigned to receive daily aspirin, β carotene, both agents, or placebo.[2] Analysis of various risk factors for cerebrovascular disease found no difference in the percentage of patients with a history of hypertension between the migraine and the non-migraine groups. Additionally, no difference in risk factors was found between physicians with non-migrainous headaches and those with no headaches.

The paper by Hagen *et al* (this issue pp 463–466)[3] lends definitive clarity to the issue. In their prospective study spanning 13 years of 22 685 adults in Nord-Trøndelag County, Norway, patients' blood pressure was measured interictally and they provided information regarding headaches and the use of pain relieving medications. Patients were subdivided into those with migrainous and those with non-migrainous headache based on modified International Headache Society criteria for migraine. Contrary to popular belief, high systolic blood pressure at baseline was associated with low headache prevalence 11 years later. This was not related to antihypertensive medication treatment. A similar effect was observed in women with migraine.

Their study is relevant because it is a cross sectional study of a large unselected population. Hypertension is more common in men but women have a higher incidence of headaches. Both women (10 698) and men (11 987) participated in HUNT-1 and HUNT-2 (Nord-Trøndelag Health Survey), supporting the conclusions in both sexes. Generalisation of the results was addressed by the authors in other reports.[4] Race and geographic region contribute to variations in the prevalence of headache and hypertension. Participants in the HUNT studies were a homogeneous white population. Thus, the applicability of the results to other populations, such as African Americans, who have a higher prevalence of hypertension, is uncertain.

J Neurol Neurosurg Psychiatry 2002;**72**:431

Authors' affiliations
D Friedman, Department of Neurology, University Hospital, 750 E Adams Street, Syracuse, New York 13210, USA

Correspondence to: Dr D Friedman; friedmad@upstate.edu

REFERENCES

1 **Janeway TC**. A clinical study of hypertensive cardiovascular disease. *Arch Intern Med* 1913;**12**:755–98.
2 **Buring JE**, Hebert P, Romero J, *et al*. Migraine and subsequent risk of stroke in the Physicians' Health Study. *Arch Neurol* 1995;**52**:129–34.
3 **Hagen K**, Stovner LJ, Vatten L, *et al*. Blood pressure and risk of headache: a prospective study of 22 685 adults in Norway. *J Neurol Neurosurg Psychiatry* 2002;**72**:463–6.
4 **Hagen K**, Zwart JA, Vatten L, *et al*. Prevalence of migraine and non-migrainous headache: head-HUNT, a large population study. *Cephalalgia* 2000;**30**:900–6.

Se proprio vogliamo dare qualcosa…

Blood Press. 2011 Aug;20(4):239-43. doi: 10.3109/08037051.2011.553934. Epub 2011 Feb 3.

Comparison of alprazolam versus captopril in high blood pressure: a randomized controlled trial.

Yilmaz S[1], Pekdemir M, Tural U, Uygun M.

⊕ **Author information**

Abstract

OBJECTIVE. Anxiety is an important cause of acute blood pressure (BP) elevation. However, the role of anxiolysis in this situation is still controversial. In this study, the relationship of anxiety with BP and the effect of anxiolytic treatment on BP were investigated. METHODS. Emergency department (ED) patients with an initial systolic BP (SBP) ≥ 160 mmHg or diastolic BP (DBP) ≥ 100 mmHg but no end organ damage were approached for inclusion in the study. In those consenting to participate, anxiety levels were measured using the State-Trait Anxiety Index (STAI) and Visual Analog Scale for Anxiety (VAS-A). Patients were randomly assigned to receive oral alprazolam 0.5 mg or captopril 25 mg. BP and anxiety levels were measured at baseline and at 1 and 2 h after administration of the study medication. RESULTS. Of 133 patients meeting inclusion criteria, 53 patients agreed to participate. Of these, 27 patients (50.9%) received captopril and 26 patients (49.1%) received alprazolam. The majority of the patients had a high-level trait (96.2%, n = 51) and state anxiety (81.1%, n = 43). The mean SBP and VAS-A values of both patient groups dropped significantly over the 2 h, with no significant difference between the two groups. A significant association between SBP and VAS-A scores was found ($F((2,50)) = 6.27$, $p = 0.004$).

CONCLUSION: A significant association exists between the level of BP and anxiety in hypertensive ED patients. Alprazolam is as effective as captopril in lowering BP in ED patients with an initial SBP > 160 mmHg.

Se il territorio collaborasse…

Med Hypotheses. 2016 Mar;88:35-7. doi: 10.1016/j.mehy.2016.01.008. Epub 2016 Jan 23.

Hypothesis: A single dose of an anxiolitic may prevent unnecessary visits to the emergency room during blood pressure elevations.

Tandeter H[1].

⊕ Author information

Abstract

Blood pressure (BP) monitoring devices are very commonly used by the general public for self-measurement. Approximately 19% of people using these devises check their BP every day or almost every day and only one third use them because their doctor recommended it. Measurement often causes anxiety and anxiety increases blood pressure in the short term. Elderly patients often visit the emergency room (ER) due to these BP elevations. Almost 10% of patients presenting to ERs complained of high BP, and between 50-75% of them receive antihypertensive drugs (sometimes with serious adverse effects) despite the fact that only 7.5% are classified as hypertensive emergencies, and only 2.8% are at risk of serious outcome. Two studies suggested the use of anxiolitics in the treatment of excessive hypertension. When compared to captopril, treatment with diazepam or alprazolam showed to be effective in lowering BP, with no significant difference between the two groups. We therefore suggest that patients with acute elevations of BP (measured at home) try an anxiolytic before deciding to go to the ER. Patients in which BP lowers with the use of tranquilizers do not need to go to the ER. We also suggest using this strategy in patients visiting community clinics and ER for the same reason. Our hypothesis is that by using our suggestions there will be a significant reduction in the number of unnecessary visits to the ER, the use of medication that may produce serious adverse effects, and an important health cost reduction, without increasing the risk for patients (a 10% reduction of ER visits may save up to 300 million dollars/year in the US alone and prevent unnecessary use of medical facilities and manpower).

Come prevenire/ridurre l'inappropriatezza in Urgenza?

- Formazione (EBM, linee guida)!!!
- Feedback dei colleghi
- Feedback del laboratorio
- Interventi strutturali (modifiche al soft
- Controlli periodici del responsabile

"Conventional medicine says take aspirin. In the absence of tort reform, defensive medicine says MRI and Cat Scan."

ma soprattutto:

* *Evitando la medicina difensiva!!*