

**“Evidence based medicine”:  
o “jungla”  
pe care trebuie sa o traversam**

***D. Vinereanu***

# Can we have “evidence based medicine”?

“Evidence-based medicine is  
the integration of  
**best research evidence**  
with  
**clinical expertise**”



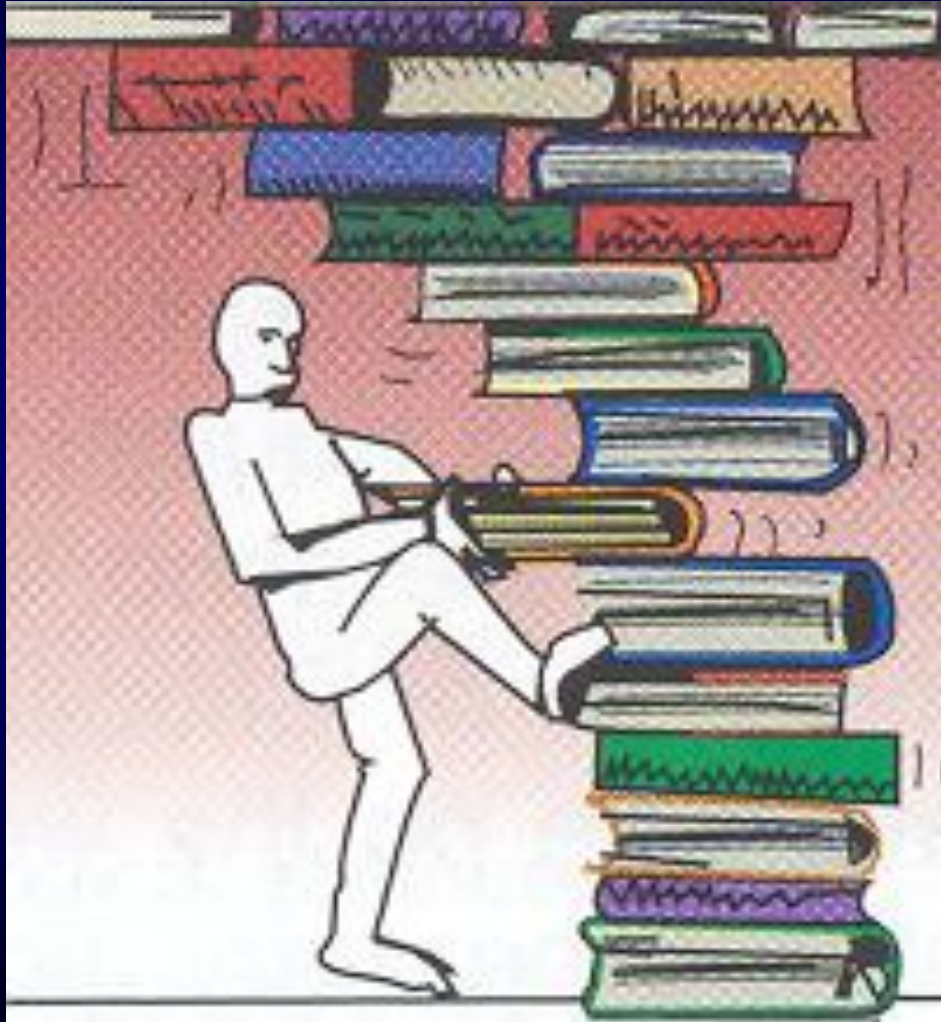
*Sackett et al. BMJ 1996.*

# Ce e “best research evidence”?

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- Cautarea dovezilor?
- Nivelul dovezilor?
- Utilizarea dovezilor?

# 1. Cautarea dovezilor



# Unde gasim “best research evidence”?

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## Web:

- MEDLINE [www.pubmed.gov](http://www.pubmed.gov)
- MEDSCAPE [www.medscape.com](http://www.medscape.com)
- HINARI [www.healthinternet.org](http://www.healthinternet.org)
- EBM [ebm.bmjournals.com](http://ebm.bmjournals.com)
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- Journale “on-line”

# AND sau OR

myocardial infarction AND echocardiography - PubMed Results - Windows Internet Explorer

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Search PubMed for myocardial infarction AND echocardiography

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- 1: [Perugini E, Sbarzaglia P, Pallotti MG, Pavesi PC, Fattori R, Di Pasquale G.](#) Related Articles, Links  
Myocardial rupture with left ventricle to coronary sinus communication: an unusual post-infarction mechanical complication. *J Cardiovasc Med (Hagerstown)*. 2008 Jan;9(1):97-100. PMID: 18268430 [PubMed - in process]
- 2: [Thibault H, Piot C, Staet P, Bontemps L, Sportouch C, Rioufol G, Cung TT, Bonnefoy E, Angoulvant D, Aupetit JF, Finet G, André-Fouët X, Macia JC, Raczka F, Rossi R, Itti R, Kirkorian G, Derumeaux G, Orize M.](#) Related Articles, Links  
Long-Term Benefit of Postconditioning. *Circulation*. 2008 Feb 11; [Epub ahead of print] PMID: 18268150 [PubMed - as supplied by publisher]
- 3: [Bridgman PG, Earwaker PL.](#) Related Articles, Links  
The case for echocardiography in non-ST elevation myocardial infarction in New Zealand. *N Z Med J*. 2007 Nov 9;120(1265):U2813. No abstract available. PMID: 18264177 [PubMed - in process]
- 4: [\[No authors listed\]](#) Related Articles, Links  
[Recurrent myocardial infarctions: peculiarities of changes of content of biomarkers and of myocardial remodeling (case-control study)] *Kardiologia*. 2007;47(7):26-8. Russian. PMID: 18260891 [PubMed - in process]
- 5: [Drobiazko OA, Krutova TV, Alekhin MN, Troitskii AV.](#) Related Articles, Links  
[Dobutamine stress-echocardiography in prognostication of risk of cardiovascular complications in patients with atherosclerosis obliterans with forthcoming surgery on the aorta and large arteries.] *Kardiologia*. 2007;47(5):34-9. Russian. PMID: 18260857 [PubMed - in process]
- 6: [de Macedo Braga LM, Laccini S, Schaan BD, Rodrigues B, Rosa K, De Angelis K, Borges LF, Ingoyen MC, Nardi NB.](#) Related Articles, Links  
In situ delivery of bone marrow cells and mesenchymal stem cells improves cardiovascular function in hypertensive rats submitted to myocardial infarction. *J Biomed Sci*. 2008 Feb 7; [Epub ahead of print] PMID: 18256904 [PubMed - as supplied by publisher]
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## 1400 articole/zi



...tive LDL-C lowering and HDL-C raising associat

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May 1, 2006

### Cardiology Library

Other Specialty Libraries...

#### Cardiology Journals [All Journals](#)

- [American Heart Journal](#)  
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- [American Journal of Geriatric Cardiology](#)  
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- [British Journal of Cardiology](#)  
Selected Articles, July, 2003 to Present
- [British Journal of Diabetes and Vascular Disease](#)  
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#### Clinical Reference

- [Hurst's The Heart Online](#)  
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**Comparison**  
of  
**Treatment**  
**Strategies**



# “Notarea jurnalelor”



= indexare:

La nivel international: ISI (Science Citation Index)

La nivel national: CNCSIS



# Ce este ISI?



*Institutul pentru Stiinta Informatiei  
din Philadelphia*

**Factorul de impact :**

Nr citari recente/Nr articole publicate

**Scorul de influenta:**

Nr de citari, ponderate  
cu influenta revistelor care citeaza articolele  
(la 5 ani dupa publicare)

# Reviste indexate ISI: 8073

## REVISTE

## Scor de influenta

1. NEW ENGLAND JOURNAL OF MEDICINE	49,42
2. NATURE	33,71
3. SCIENCE	30,94
4. JAMA	28,41
5. LANCET	27,13
119. CIRCULATION	8,51

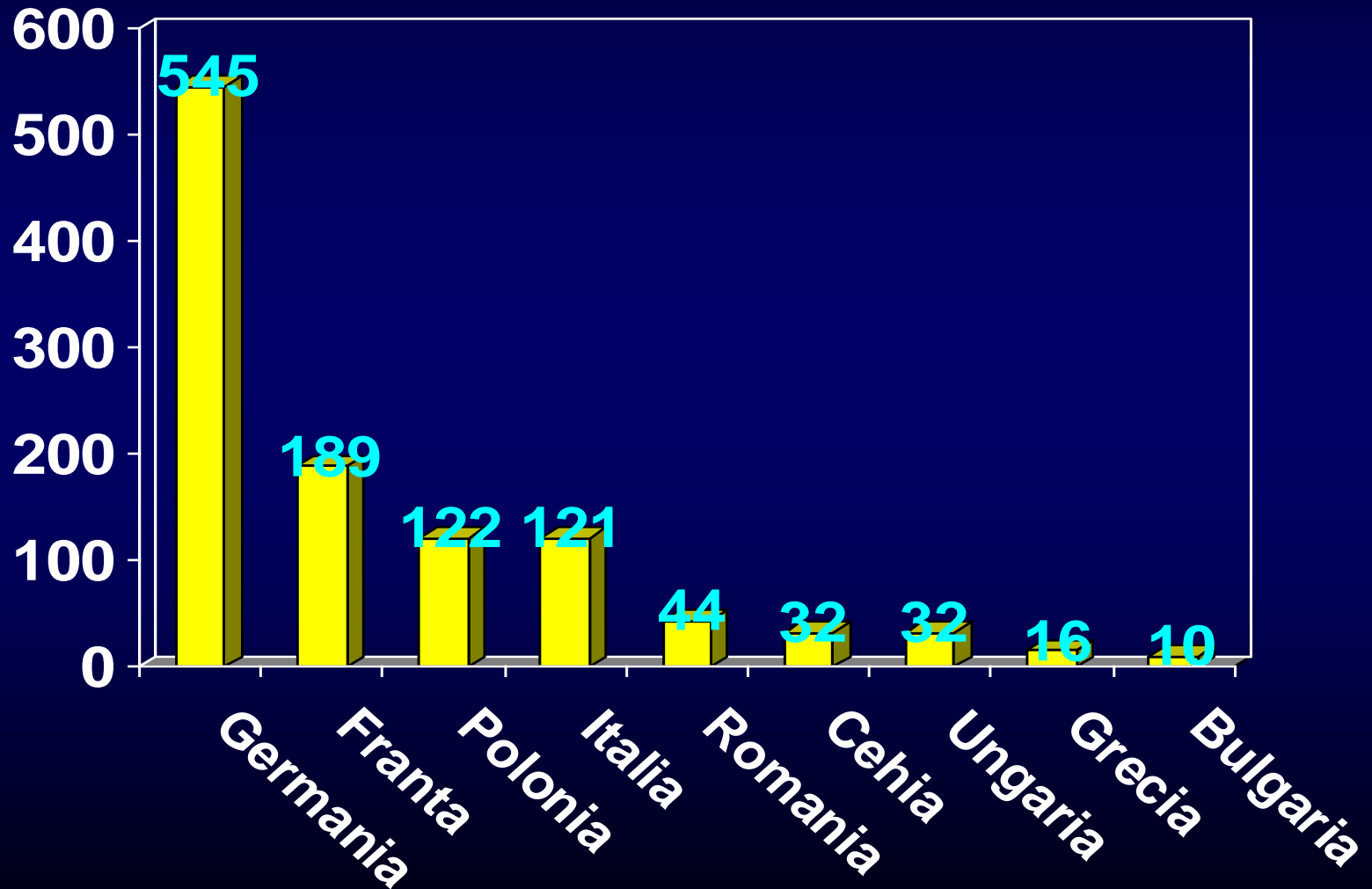
# Reviste romanesti indexate ISI: 44



## 9 reviste medicale:

REVISTE	IF
1. J OF CELLULAR AND MOLECULAR MEDICINE	4,6
2. J OF GASTROINTESTINAL AND LIVER DISEASES	1,4
3. CHIRURGIA	0,6
4. Revista Romana de Bioetica	0,5
4. Romanian Journal of Morphol and Embryol	0,3

# Tari cu reviste indexate ISI



# Ce este indexarea CNCSIS?

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**A** = reviste cotate ISI

**B** = reviste care detin potentialul necesar pentru  
obtinerea recunoasterii internationale

**C** = publicatii stiintifice de importanta nationala

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**D** = publicatii aflate în evidenta CNCSIS

## 2. Nivelul dovezilor



- Nivel “A”**      Date dovedite in cel putin 2 studii clinice randomizate sau prin meta-analiza
  
- Nivel “B”**      Date dovedite printr-un singur studiu randomizat, sau prin studii ne-randomizate multiple si largi
  
- Nivel “C”**      Opinia expertilor si/sau studii mici, registre

# Gradele de recomandare



**Gradul I:** Acesta-i tratamentul!

**Gradul IIa:** Poti aplica acest tratament.

**Gradul IIb:** Nu exista suficiente dovezi  
pro/contra.

**Gradul III:** Nu trata!



**How much should we believe  
medical literature?**

**No 100% acceptance  
No 100% rejection**

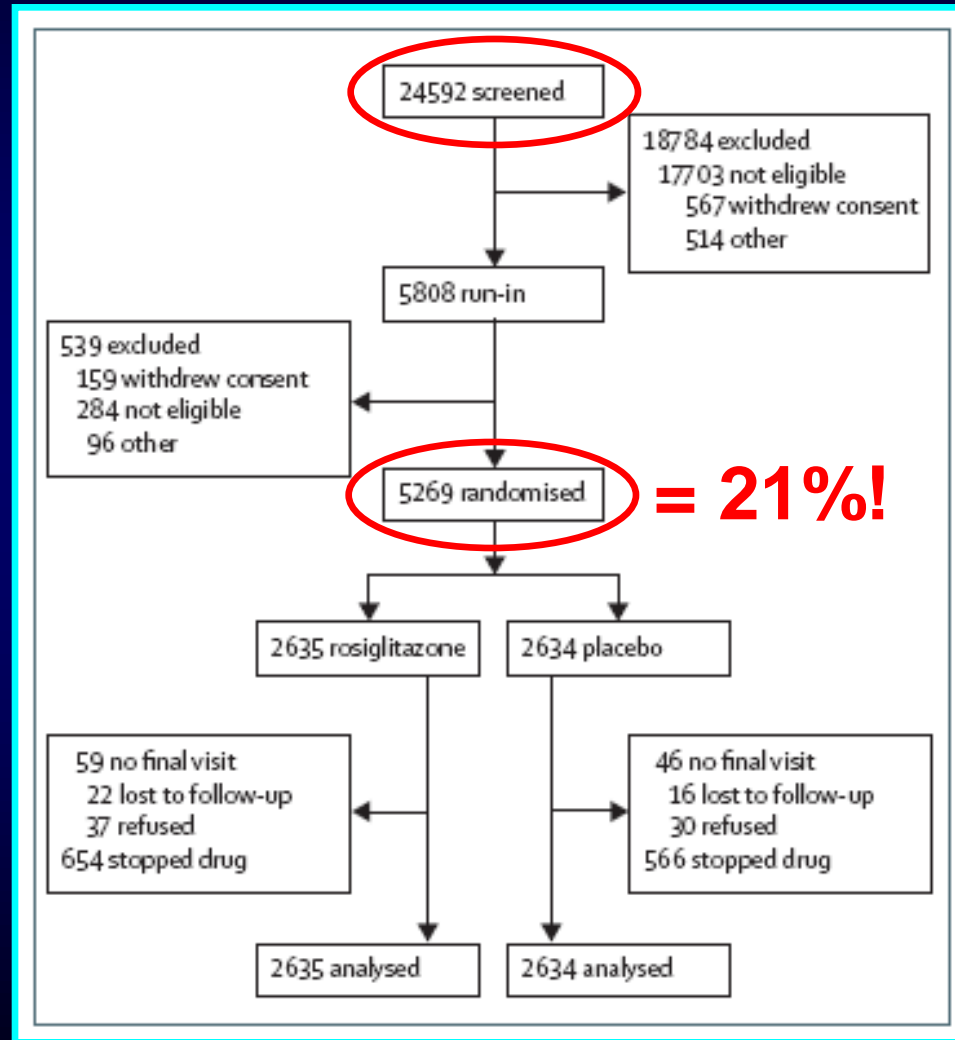
***Critical appraisal of medical literature***

# 3. Utilizarea dovezilor

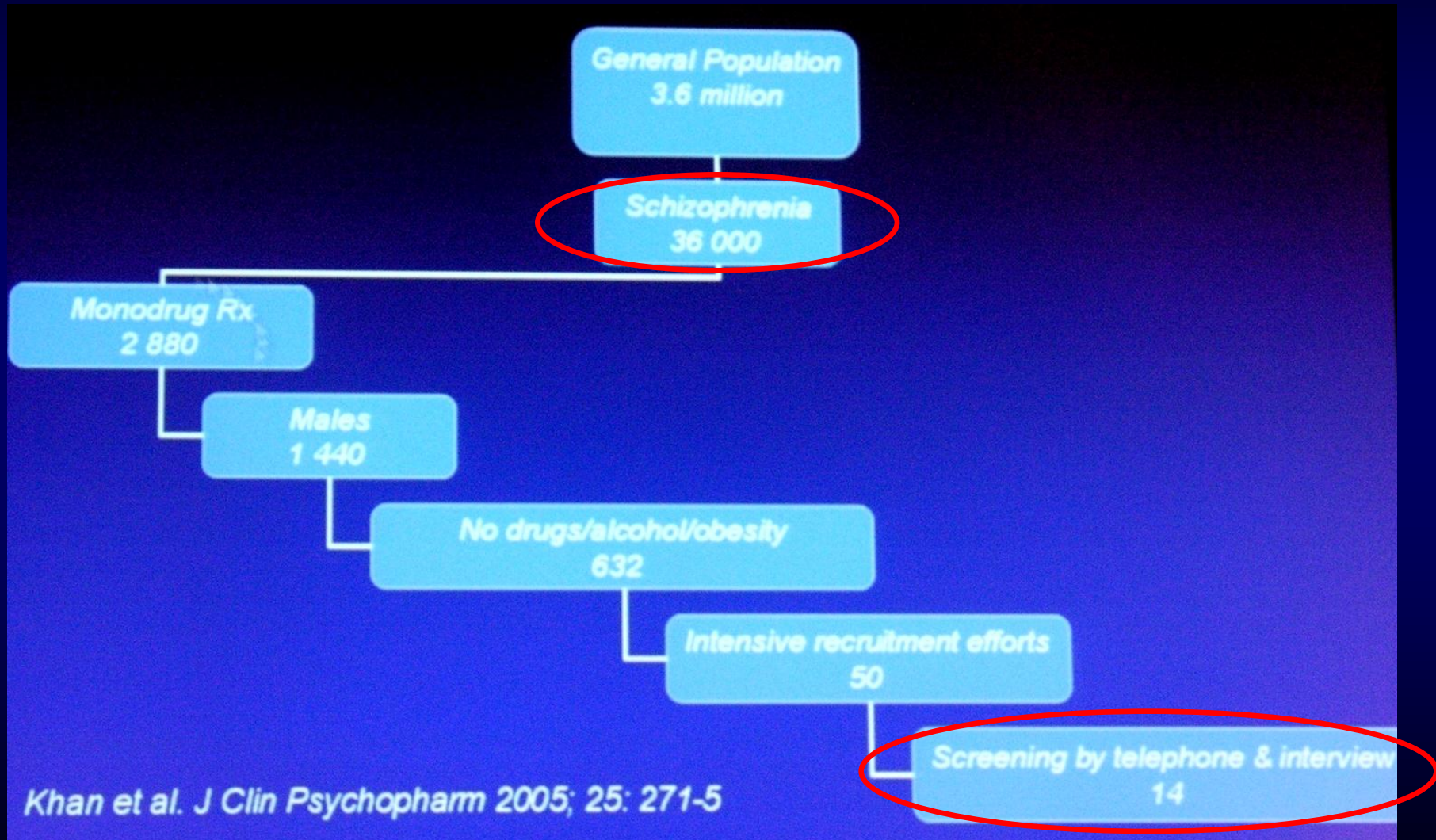


1. How representative are RCTs for the “real world”?
2. How important is the correct sample size?
3. How reliable is the subgroups analysis?
4. How about multiple comparisons?

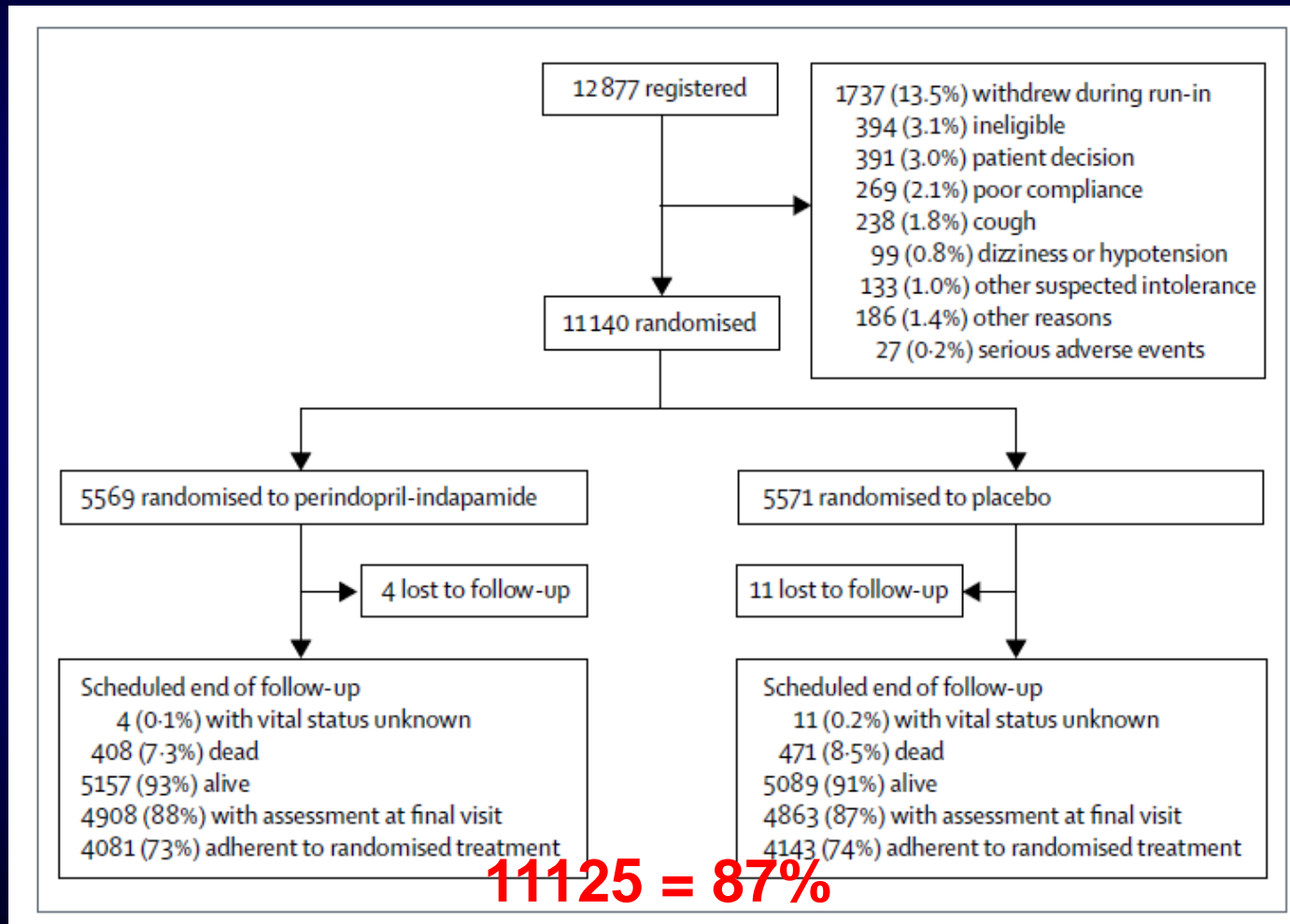
# 1. How representative are RCTs for the “real world”?



# ..it can be even worse!



# Positive example

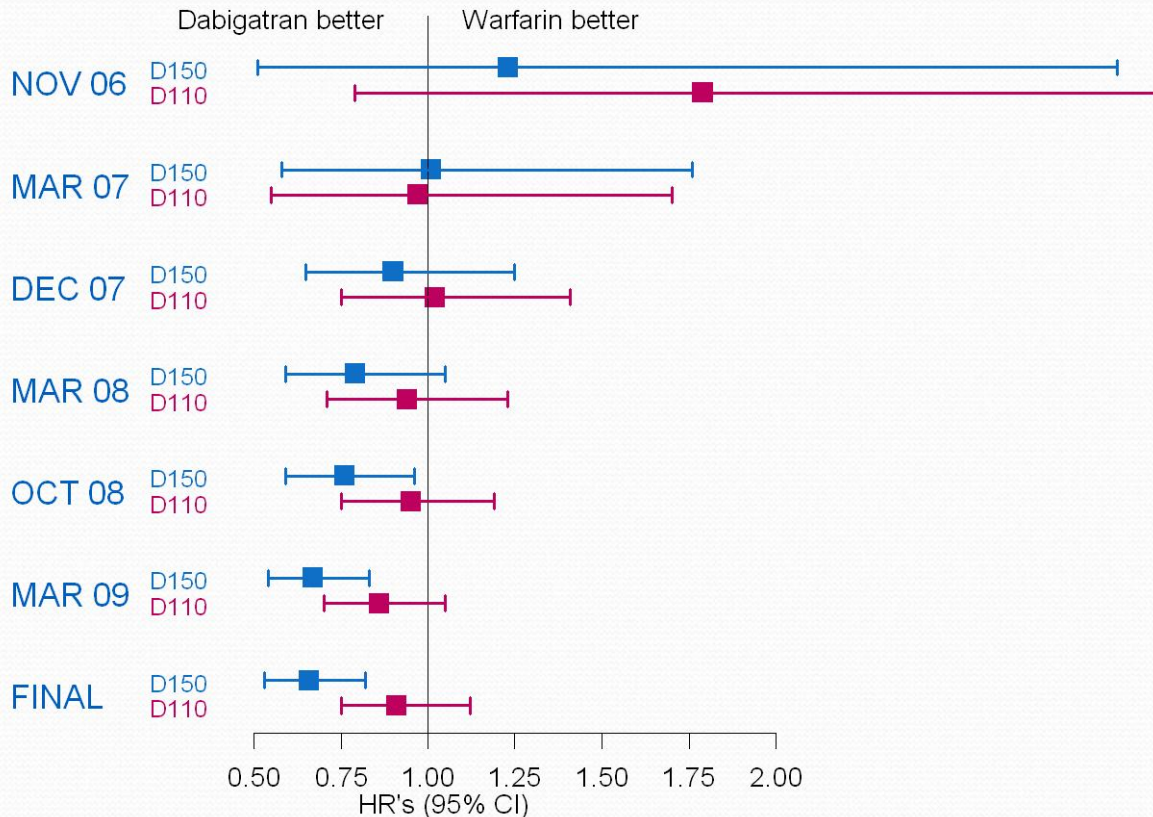




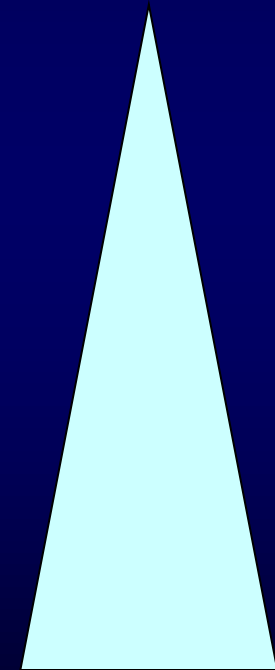
# 2. How important is the correct sample size?

*Event driven studies.*

Interim analysis RE-LY study – Primary Outcome



No of events



560



# 3. Limits of subgroups analysis

**PRAISE I:**  
Amlodipine is good in HF ( $p = 0.06$ )

**UNEXPECTED** {

**BUT *subgroups analysis:***  
**FALSE** for ischaemic HF  
**TRUE** for non-ischaemic HF



**PRAISE II:**  
Amlodipine in non-ischaemic HF?

**Results:** NO effect

# 4. Multiple comparisons?

With a non-effective treatment:

- ❑ performing 10 comparison statistical tests
- ❑ 40% risk to get at least one significant test at level .05

Number of tests	Risk (chance)
5	23%
10	40%
20	64%
50	92%

# Count the number of comparisons!

Study	Treatment	Condition	No of comp.	No of sign. "p"
CORONA	Rosuvastatin vs placebo	HF	64	3



In a prespecified secondary analysis, there were fewer hospitalizations for cardiovascular causes in the rosuvastatin group (2193) than in the placebo group (2564) ( $P < 0.001$ ).

***65% risk of being due to chance!***

**Definite answer: GISSI-HF study**  
***20 comparisons/0 significant***

CORONA study. *N Engl J Med* 2007.  
GISSI-HF study. *Lancet* 2008.