31 Giornate CardioloGiChe torinesi

TURIN
October
24th-26th
2019

# TAVI PATIENTS: HOW FAR SHOULD WE GO? CLINICAL SESSION

The challenge: a 90-year-old patient undergoing TAVI

## It's too far, let's stop now!

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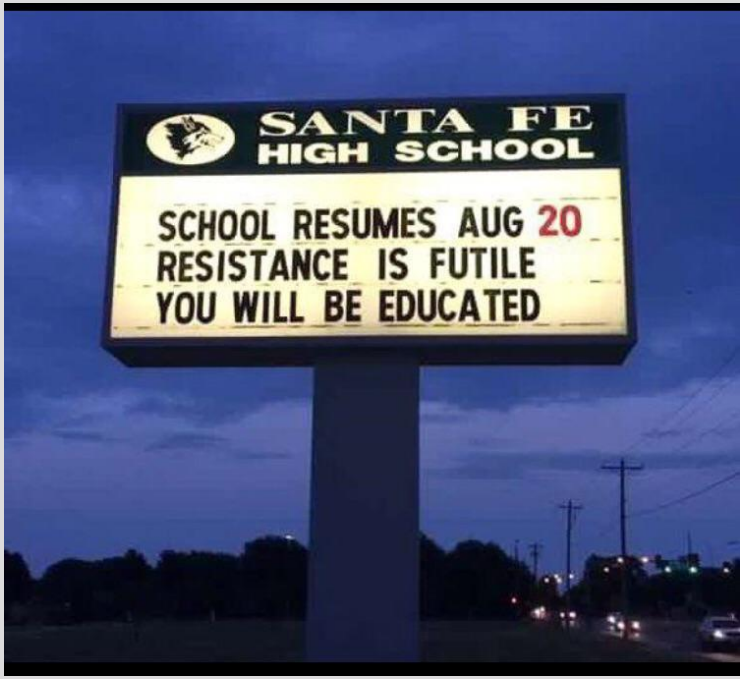
# Conflict of interests: None

# Futility:
## fail to derive a functional, morbidity, or mortality benefit

MEDICINE AND PUBLIC ISSUES

**Medical Futility: Its Meaning and Ethical Implications**

Lawrence J. Schneiderman, MD; Nancy S. Jecker, PhD; and Albert R. Jonsen, PhD



# No, because in nonagenarians…

1. I believe in ageism
2. Mortality issue is not an issue
3. I can't predict real risk
4. Frailty is a too difficult concept for an interventional cardiologist
5. LFLGp-AS is a myocardial disease
6. I don't have enough experience
7. Don't change horses in midstream

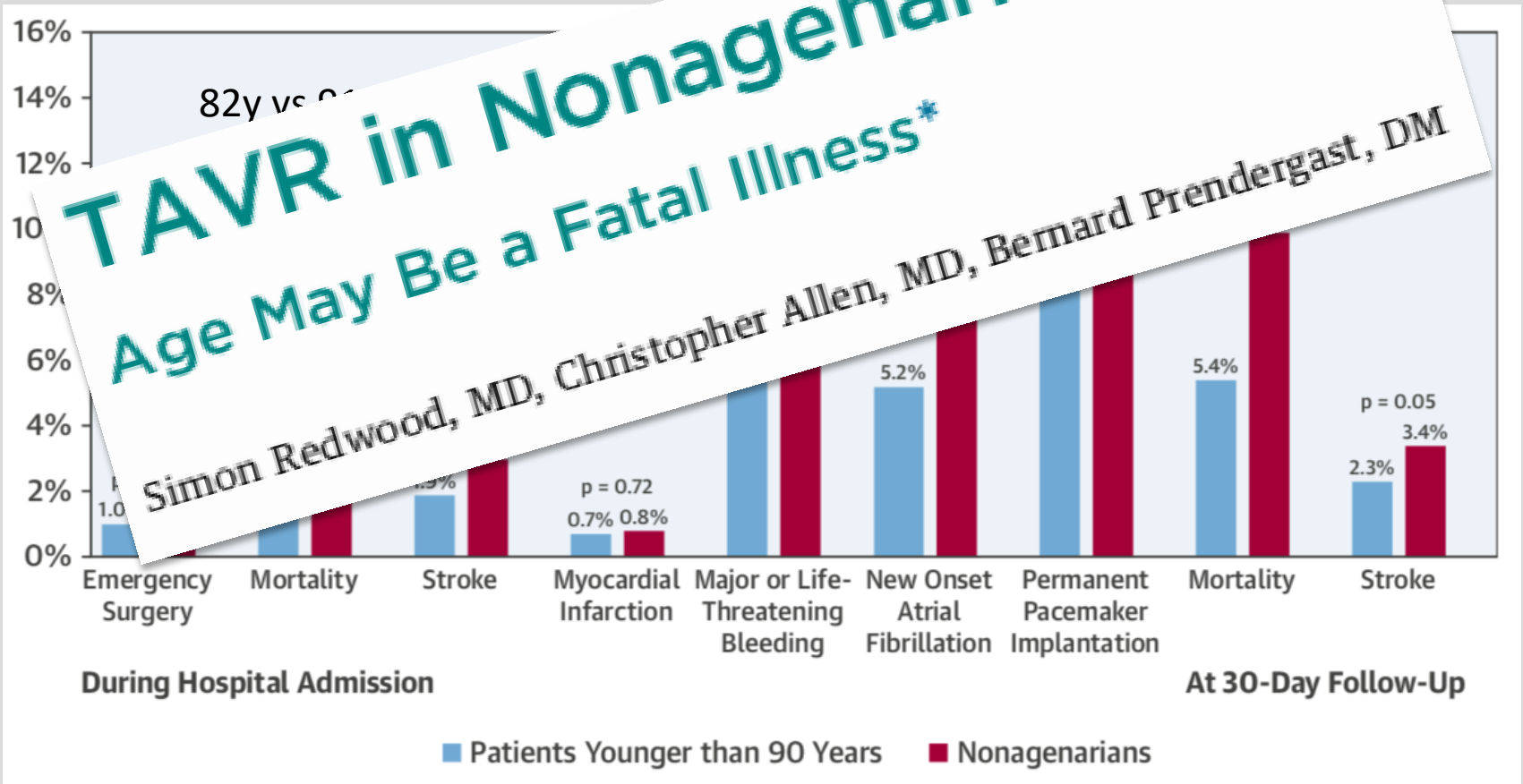


To deny an intervention or a procedure only on the basis of age is called AGEISM and it is a not very prudent choice from an ethical, clini nd medico-
view

# 1.I believe in ageism

## Transfemoral TAVR in Nonagena

laboration




Vlastra, W. et al. J Am Coll Cardiol Intv. 2019;12(10):911–20

# 2.Mortality issue is not an issue

| | Life expectancy | |
|---|---|---|
| | Male | Female |
| 0 | 80.4 | 85.1 |
| 30 years | 51 | 55.5 |
| 60 years | 23.1 | 26.9 |
| 77 years | 11.6 | 14.2 |
| 90 years | 4.1 | 4.9 |



# 3. I can't predict real risk

Original article

FIC Federazione Italiana di Cardiologia Italian Federation of Cardiology

**Inaccuracy of available surgical risk scores to predict outcomes after transcatheter aortic valve replacement**

Fabrizio D'Ascenzo[a], Flavia Ballocca[a], Claudio Moretti[a], Marco Barbanti[c], Valeria Gasparetto[f], Marco Mennuni[e], Maurizio D'Amico[a], Federico Conrotto[a], Stefano Salizzoni[b], Pierluigi Omedè[a], Chiara Colaci[a], Giuseppe B. Zoccai[d], Mario Lupo[b], Giuseppe Tarantini[f], Massimo Napodanno[f], Patrizia Presbitero[e], Imad Sheiban[a], Corrado Tamburino[c], Sebastiano Marra[a] and Fiorenzo Gaita[a]

***Multivariate analysis for in-hospital complications and 30-day all-cause mortality***

| | OR | LCI | UCI | *P* |
|---|---|---|---|---|
| Logistic regression for 30-day all-cause mortality | | | | |
| Age (years) | 1.4 | 0.8 | 2.4 | 0.09 |
| Renal clearance less than 30 ml/min/$m^2$ | 0.61 | 0.10 | 3.53 | 0.58 |
| Ejection fraction (as continuous variable) | 0.8 | 0.7 | 1.5 | 0.56 |
| Life-threatening and major bleeding | 5.1 | 1.7 | 16 | 0.005 |
| Acute kidney injury | 1.9 | 0.4 | 14 | 0.40 |
| Major vascular complications | 1.5 | 0.6 | 2.5 | 0.80 |
| Logistic Euroscore | 1.03 | 1.01 | 1.05 | 0.027 |
| STS mortality score | 1.1 | 1.06 | 1.31 | 0.02 |
| ACEF score | 9.1 | 0.8 | 45 | 0.06 |
| Logistic regression for in-hospital complications | | | | |
| Age (years) | 1.4 | 0.8 | 2.4 | 0.09 |
| Renal clearance less than 30 ml/min/$m^2$ | 2.2 | 1.3 | 3.9 | 0.003 |
| Ejection fraction (as continuous variable) | 1.02 | 1.01 | 1.04 | 0.001 |
| Previous stroke | 2.5 | 1.4 | 4 | 0.03 |
| Logistic Euroscore | 1.03 | 0.98 | 1.05 | 0.13 |
| STS mortality score | 1.04 | 1.01 | 1.06 | 0.005 |
| ACEF score | 0.9 | 0.28 | 4 | 0.07 |

ACEF Cstat: 0.6

Euroscore Cstat: 0.53

STS score Cstat: 0.62

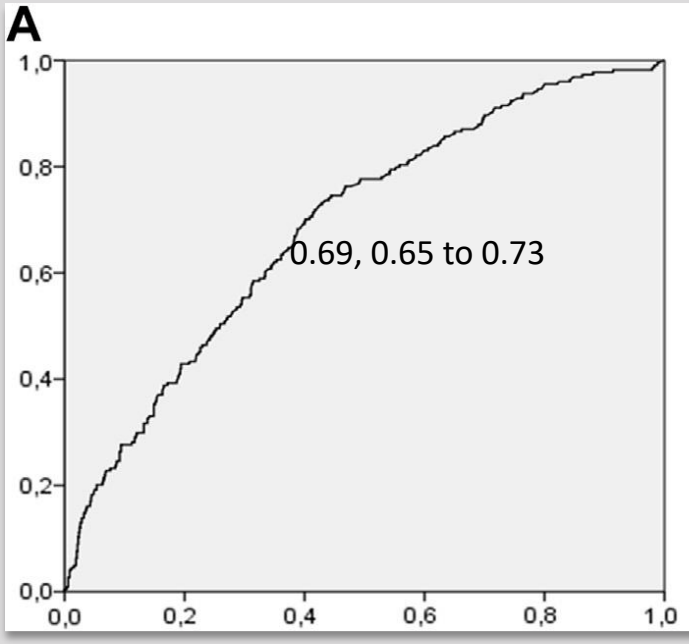
Cardiovasc Med 2013, 14:894–898

# 3. I can't predict real risk

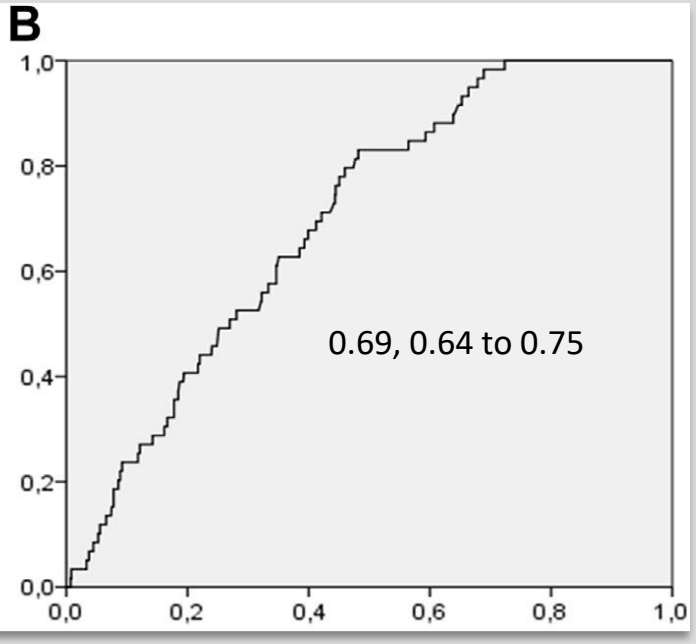
**Usefulness and Validation of the Survival posT TAVI Score for Survival After Transcatheter Aortic Valve Implantation for Aortic Stenosis**

Previous stroke
Inverse of renal clearance
Systolic PAP >50 mmHg

all-cause death at 1 year




all-cause death at 30 days




Am J Cardiol 2014 15; 114: 1867-74



## Improvement of Risk Prediction After Transcatheter Aortic Valve Replacement by Combining Frailty With Conventional Risk Scores

Andreas W. Schoenenberger, MD,[a] André Moser, PhD,[a,b] Dominic Bertschi, MD,[a] Peter Wenaweser, MD,[c] Stephan Windecker, MD,[c] Thierry Carrel, MD,[d] Andreas E. Stuck, MD,[a] Stefan Stortecky, MD[c]

## Do frailty measures improve prediction of mortality and morbidity following transcatheter aortic valve implantation? An analysis of the UK TAVI registry

Glen P Martin,[1] Matthew Sperrin,[1] Peter F Ludman,[2] Mark A deBelder,[3] Mark Gunning,[4,5] John Townend,[2] Simon R Redwood,[6] Umesh T Kadam,[4,5] Iain Buch

## Gait Speed Predicts 30-Day Mortality After Transcatheter Aortic Valve Replacement

### Results From the Society of Thoracic Surgeons/American College of Cardiology Transcatheter Valve Therapy Registry

Joakim Alfredsson, MD; Amanda Stebbins, MS; J. Matthew Brennan, MD, MPH;

REVIEW

Annals of Internal Medicine

## Preoperative Frailty Assessment and Outcomes at 6 Months or Later in Older Adults Undergoing Cardiac Surgical Procedures

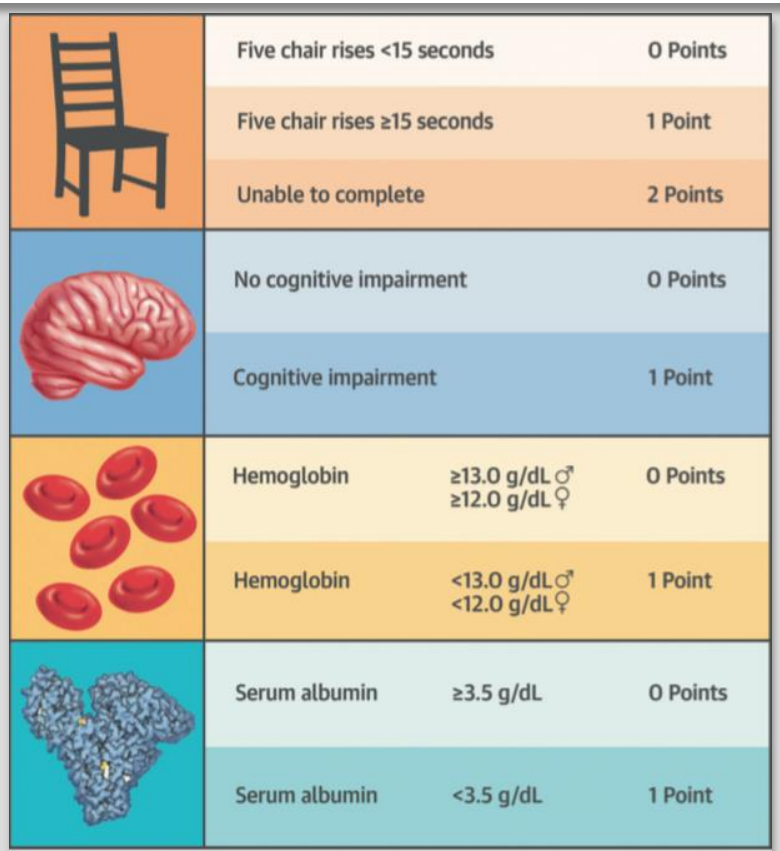
### A Systematic Review

Dae Hyun Kim, MD, MPH, ScD; Caroline A. Kim, MD, MS, MPH; Sebastian Placide, BA; Lewis A. Lipsitz, MD; and Edward R. Marcantonio, MD, ScM

# 4. Frailty is a too difficult concept for an interventional cardiologist

## Frailty in Older Adults Undergoing Aortic Valve Replacement

### The FRAILTY-AVR Study




| EFT Score | 1-Year Mortality TAVR | SAVR |
|---|---|---|
| 0-1 | 6% | 3% |
| 2 | 15% | 7% |
| 3 | 28% | 16% |
| 4 | 30% | 38% |
| 5 | 65% | 50% |

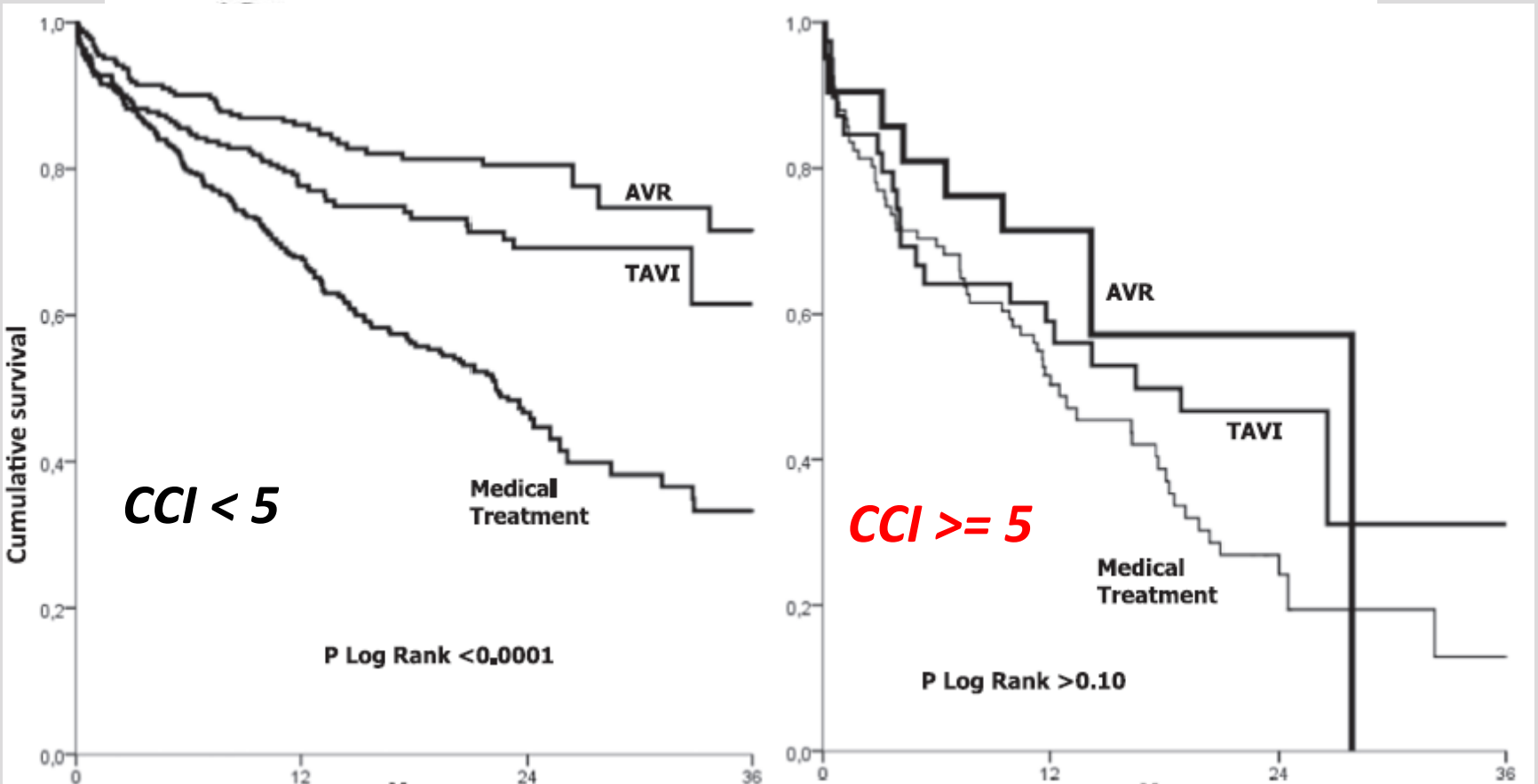
C= 0.78

Afilalo, J. et al. J Am Coll Cardiol. 2017;70(6):689–700.

# Comorbidity and intervention in octogenarians with severe symptomatic aortic stenosis☆

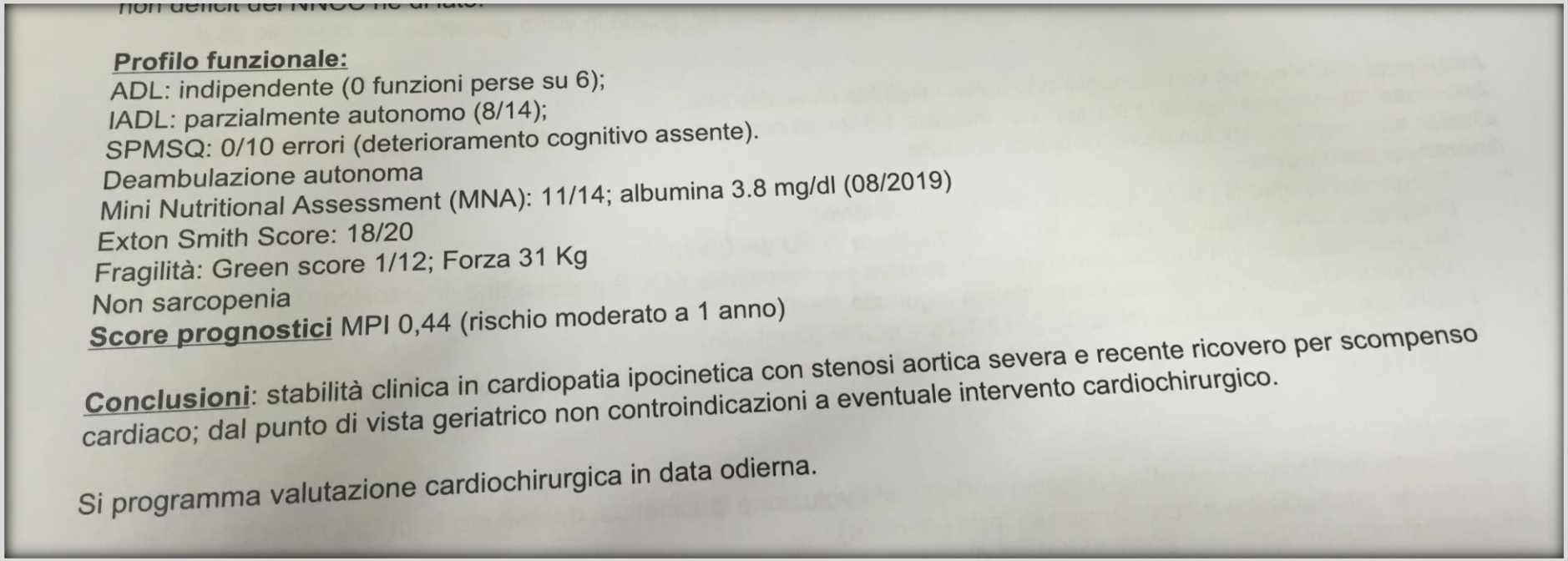
International Journal of Cardiology 189 (2015) 61–66

*Methods:* We used the data from PEGASO (*Pronóstico de la Estenosis Grave Aórtica Sintomática del Octogenario* — Prognosis of symptomatic severe aortic stenosis in octogenarians), a prospective registry that included consecutively 928 patients aged ≥80 years with severe symptomatic AS.



# 4. Frailty is a too difficult concept for an interventional cardiologist

## …Imagine for a Heart Surgeon



non deficit del NNCS ne di lato.

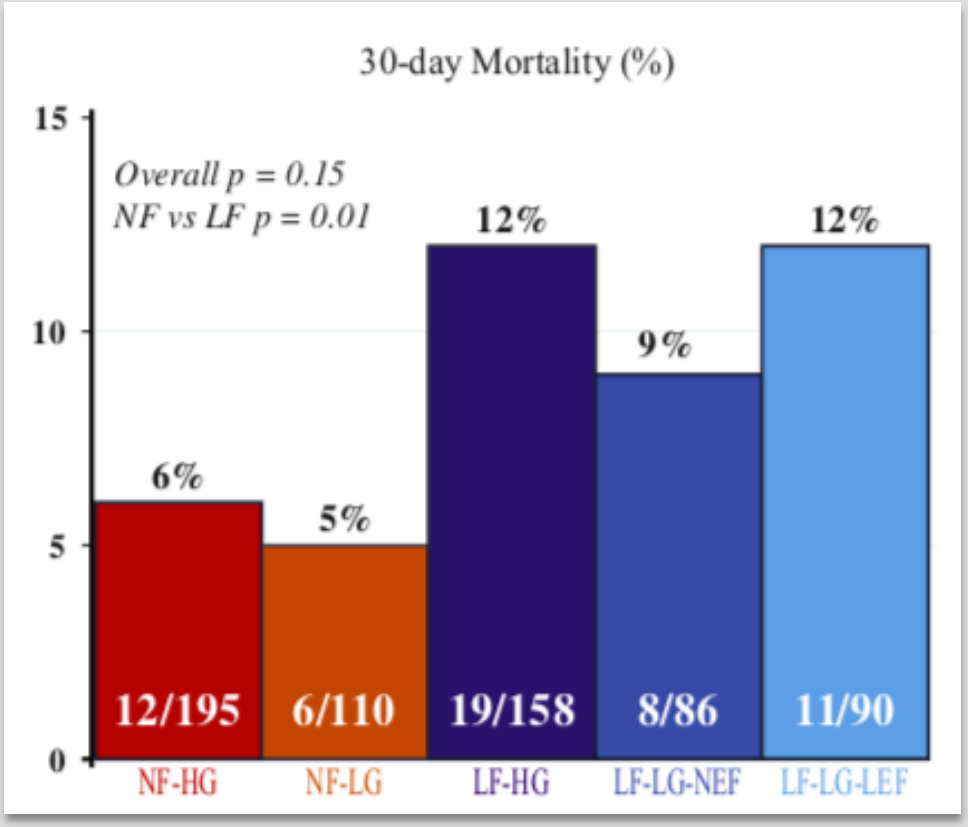
**Profilo funzionale:**
ADL: indipendente (0 funzioni perse su 6);
IADL: parzialmente autonomo (8/14);
SPMSQ: 0/10 errori (deterioramento cognitivo assente).
Deambulazione autonoma
Mini Nutritional Assessment (MNA): 11/14; albumina 3.8 mg/dl (08/2019)
Exton Smith Score: 18/20
Fragilità: Green score 1/12; Forza 31 Kg
Non sarcopenia
**Score prognostici** MPI 0,44 (rischio moderato a 1 anno)

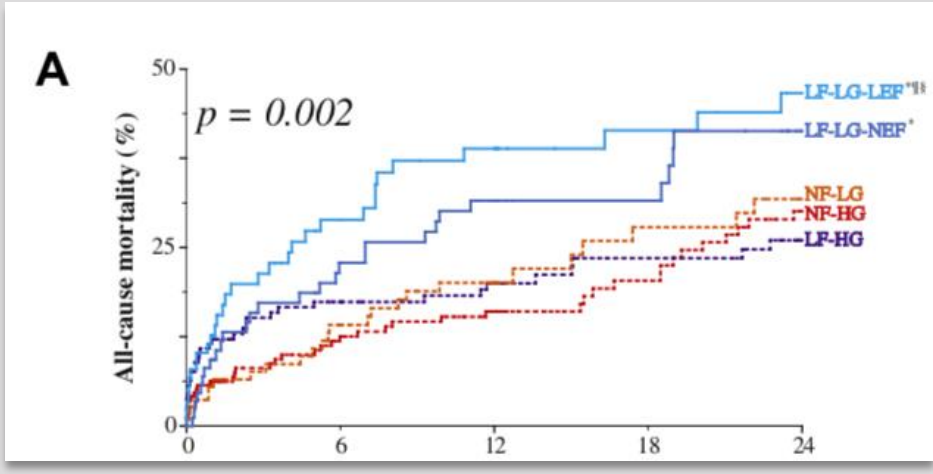
**Conclusioni**: stabilità clinica in cardiopatia ipocinetica con stenosi aortica severa e recente ricovero per scompenso cardiaco; dal punto di vista geriatrico non controindicazioni a eventuale intervento cardiochirurgico.

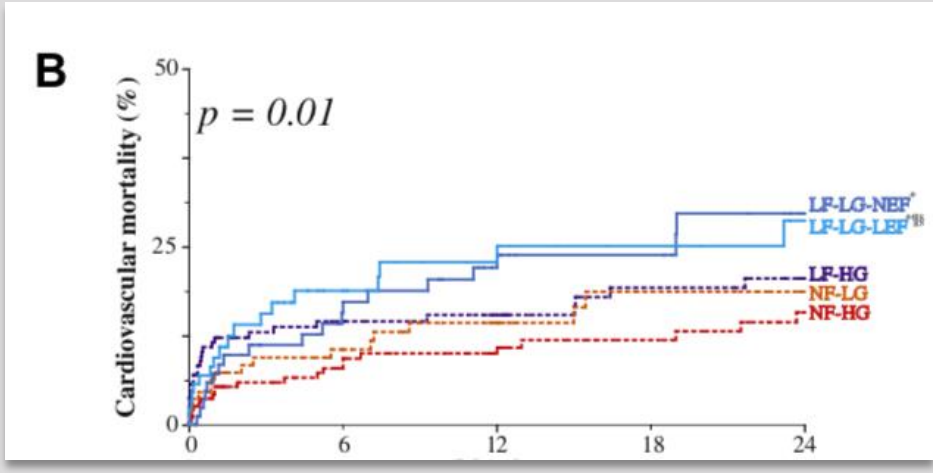
Si programma valutazione cardiochirurgica in data odierna.

# 5. LFLGp-AS is a myocardial disease

## Impact of Low Flow on the Outcome of High-Risk Patients Undergoing Transcatheter Aortic Valve Replacement



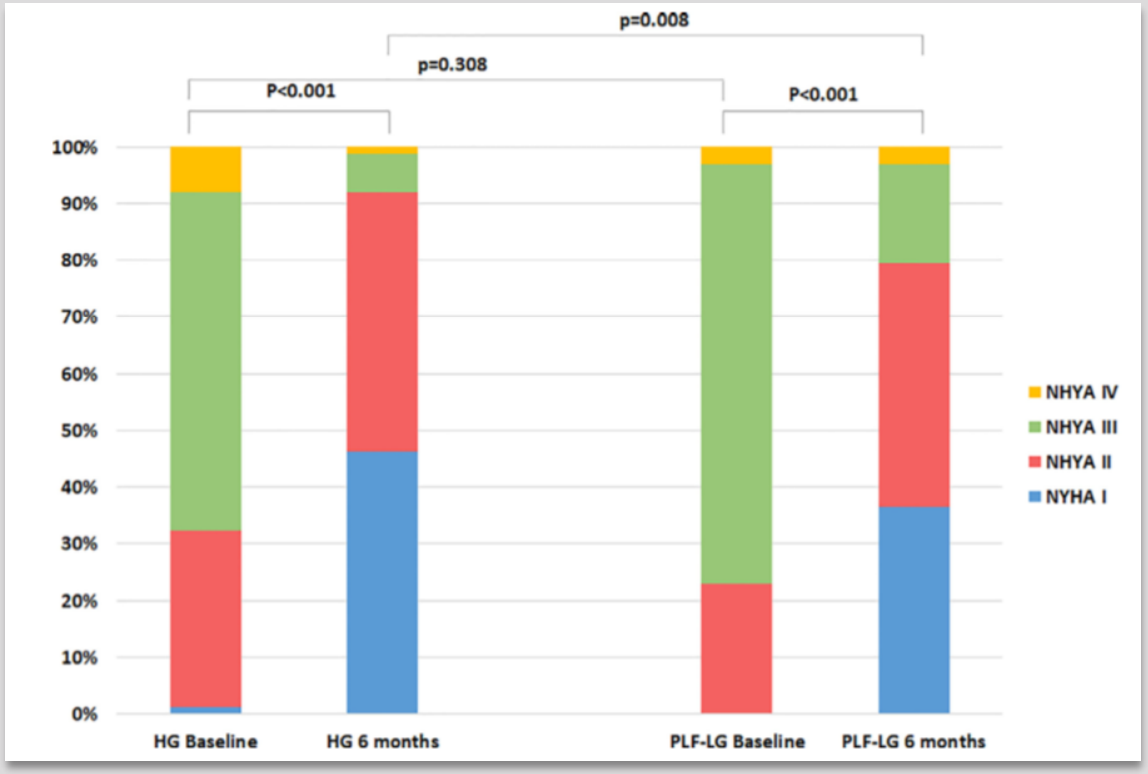




J Am Coll Cardiol 2013;62:782–8

# 5. LFLGp-AS is a myocardial disease

## Transcatheter Aortic Valve Implantation in Patients With Paradoxical Low-Flow, Low-Gradient Aortic Stenosis

TAVI was a futile treatment in one fourth of patients with PLF-LG-AS.




Am J Cardiol 2018;122:625-632

## 6. I don't have enough experience/evidence is scarce

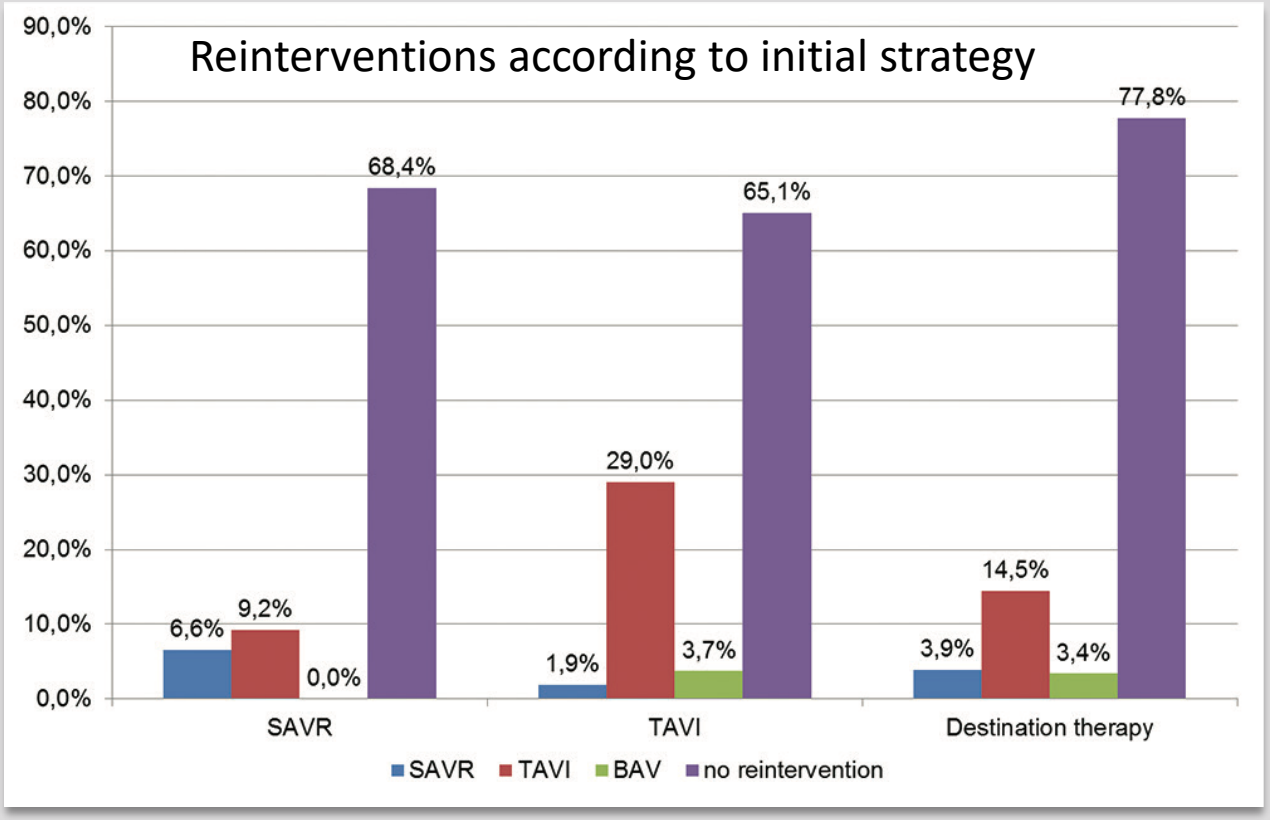
### TAVR Molinette 2008-2019


Among 570 TAVR 2008-2019 only 22 were > 90 y (3.9%)

# 7. Don't change horses in midstream

## Outcomes of Patients Undergoing Balloon Aortic Valvuloplasty in the TAVI Era: A Multicenter Registry

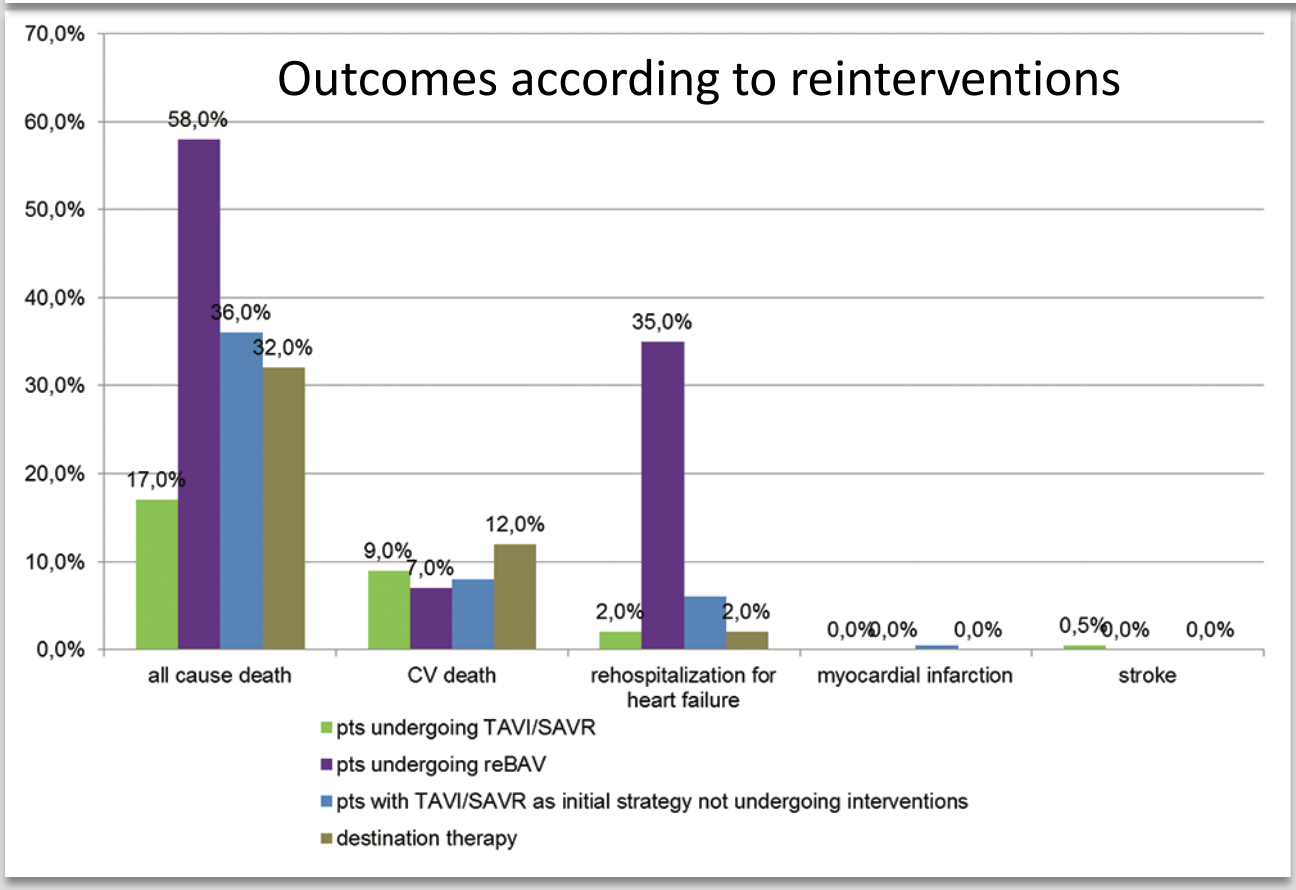
All Patients
n = 811




Moretti et al. J INVASIVE CARDIOL 2015;27(12):547-553

# 7. Don't change horses in midstream

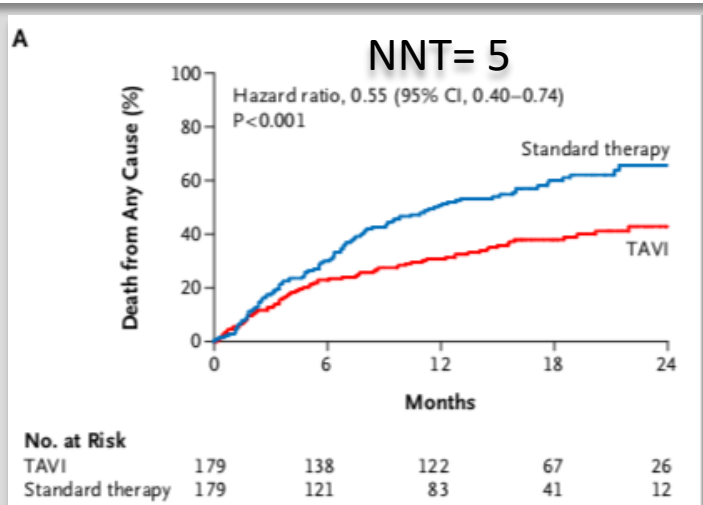
## Outcomes of Patients Undergoing Balloon Aortic Valvuloplasty in the TAVI Era: A Multicenter Registry

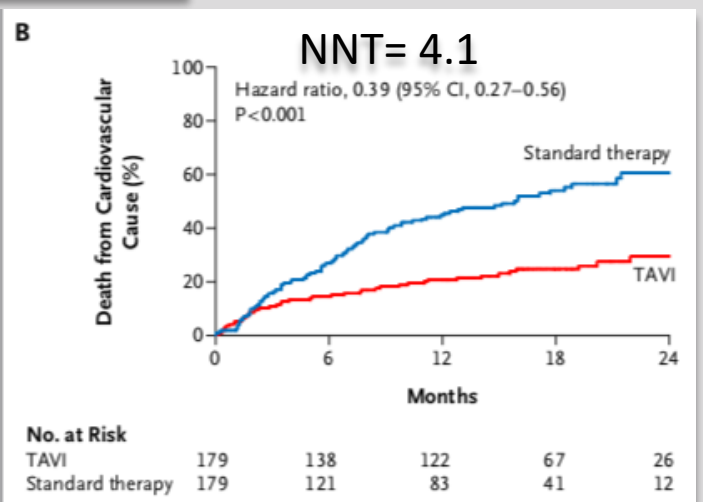


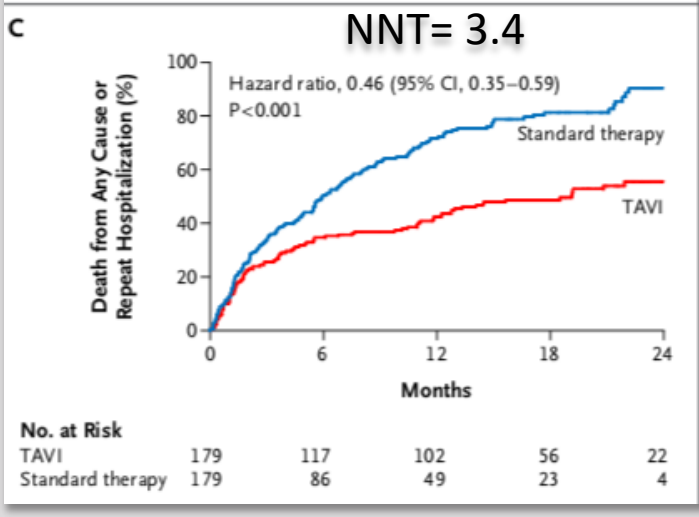

Moretti et al. J INVASIVE CARDIOL 2015;27(12):547-553

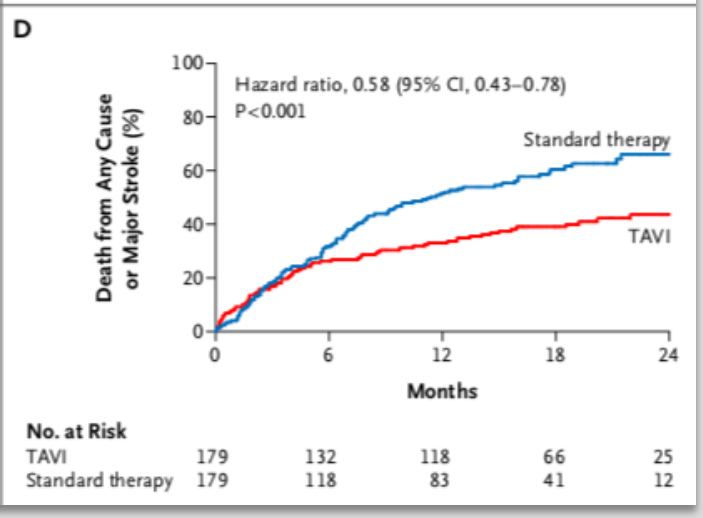
# Transcatheter Aortic-Valve Implantation for Aortic Stenosis in Patients Who Cannot Undergo Surgery

N Engl J Med 2010;363:1597-607





# Factors related to futility

## Non-cardiac conditions

- Severe pulmonary disease
- Severe renal dysfunction
- Frialty

## Cardiac conditions

- Low-flow–low-gradient aortic stenosis (LF-LG AS)
- Pulmonary hypertension
- Severe mitral regurgitation.



# Thanks for your attention