Limiting Care in Cardiothoracic Surgery

End of Life Matters — SAAPM Seminar
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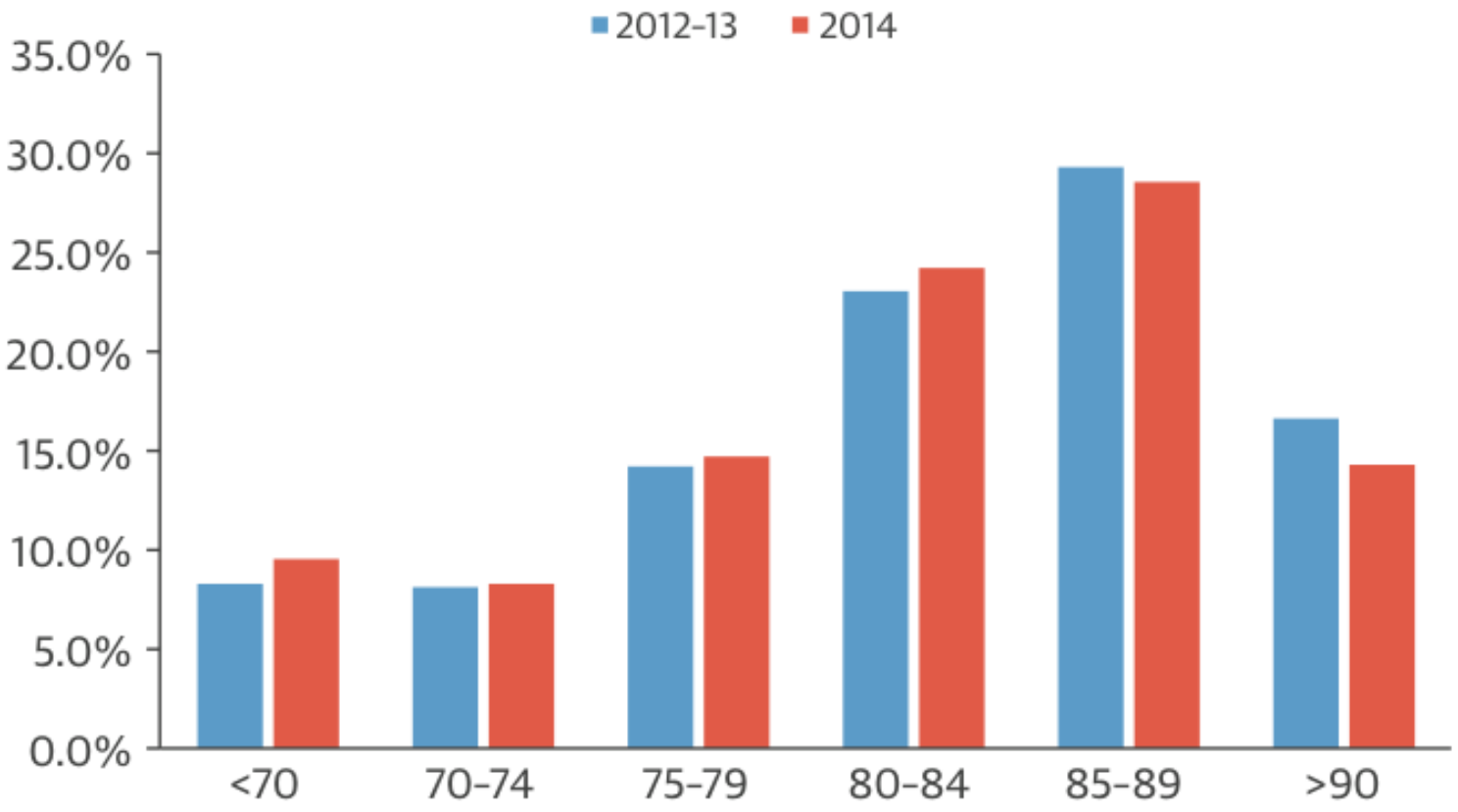
Government of South Australia
SA Health

Greg Rice
Cardiac and Thoracic Surgery
Flinders Medical Centre

New Technology

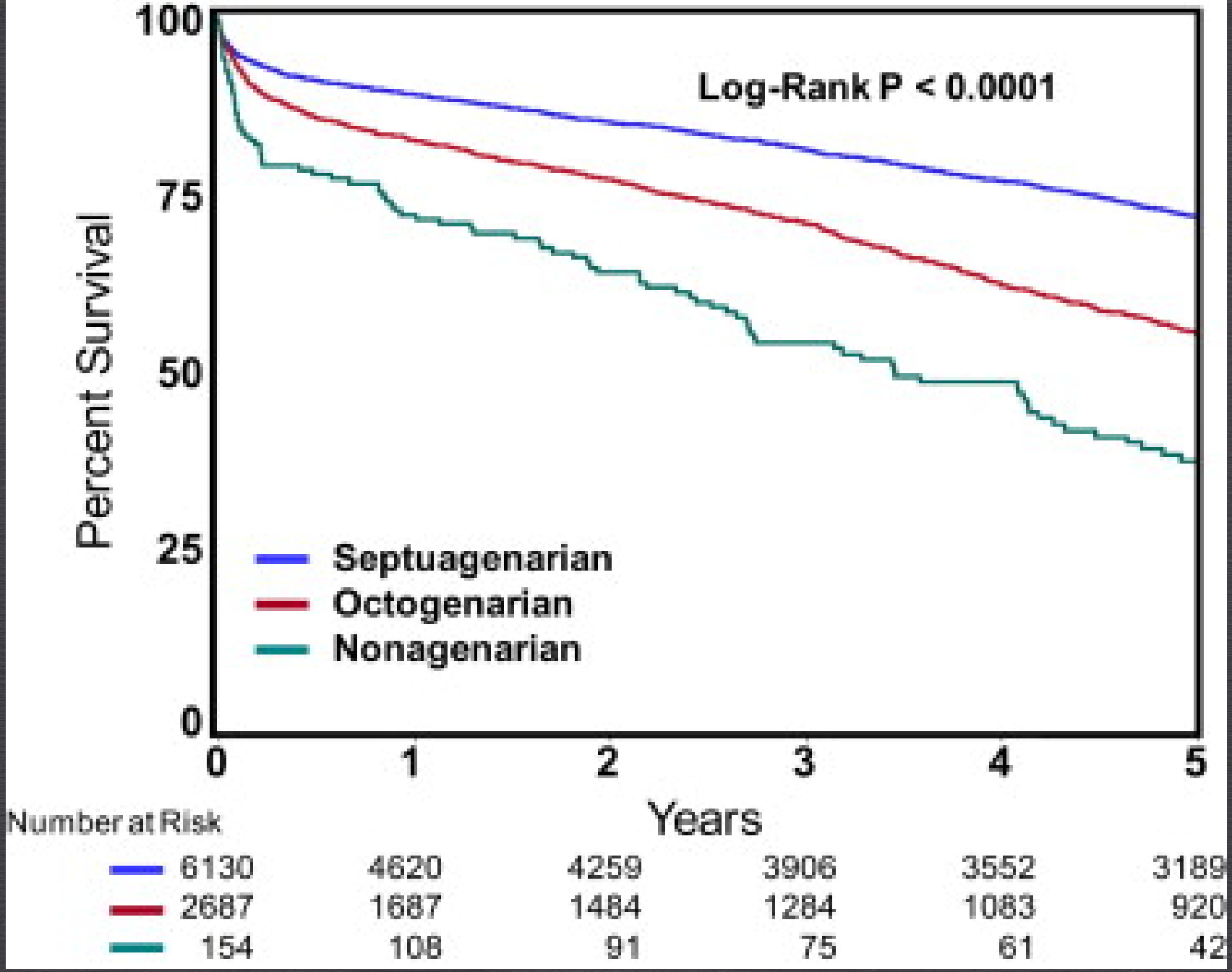
- Numerous procedures and technologies now available to extend life in patients with heart disease:
  - Transcatheter valve procedures (TAVI, TMVI)
  - Ventricular assist devices (VADs), transplantation
  - Extracorporeal membrane oxygenation (ECMO)
- Lung cancer and chronic lung disease amenable to various treatments:
  - Immunotherapy, chemotherapy
  - Stereotactic radiotherapy
  - Home oxygen

FIGURE 2 **Age of Patients Undergoing TAVR, 2012 to 2014**



The majority of patients from 2012 to 2013 and 2014 are from 80 to 90 years of age. Although there were significant differences over time, these differences were not clinically significant. TAVR = transcatheter aortic valve replacement.

Holmes *et al*. J Am Coll Cardiol. 2015;66:2813-23

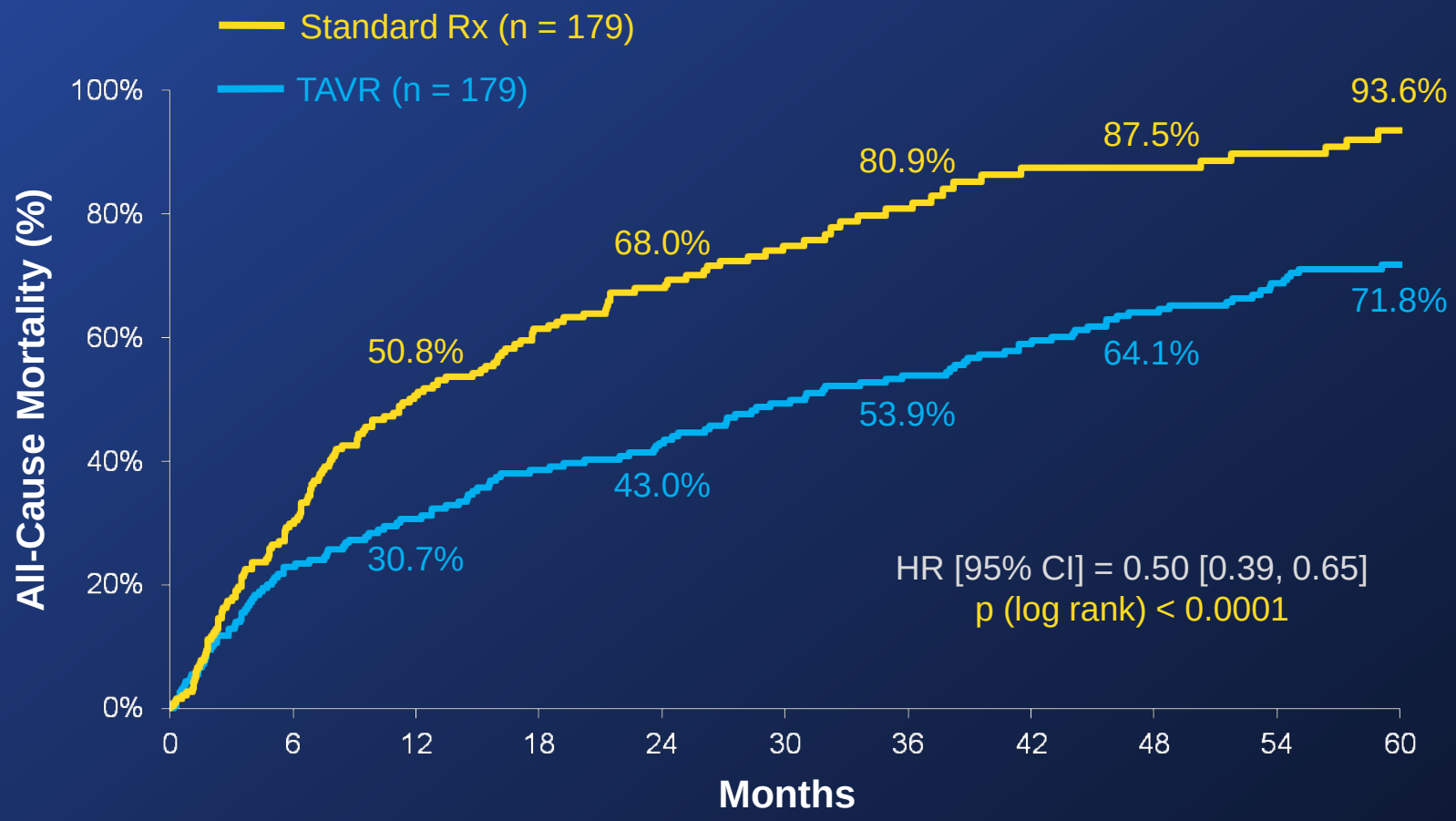


Caceres *et al*. Ann Thorac Surg. 2013;95:1598-1602

Where Is The Benefit?

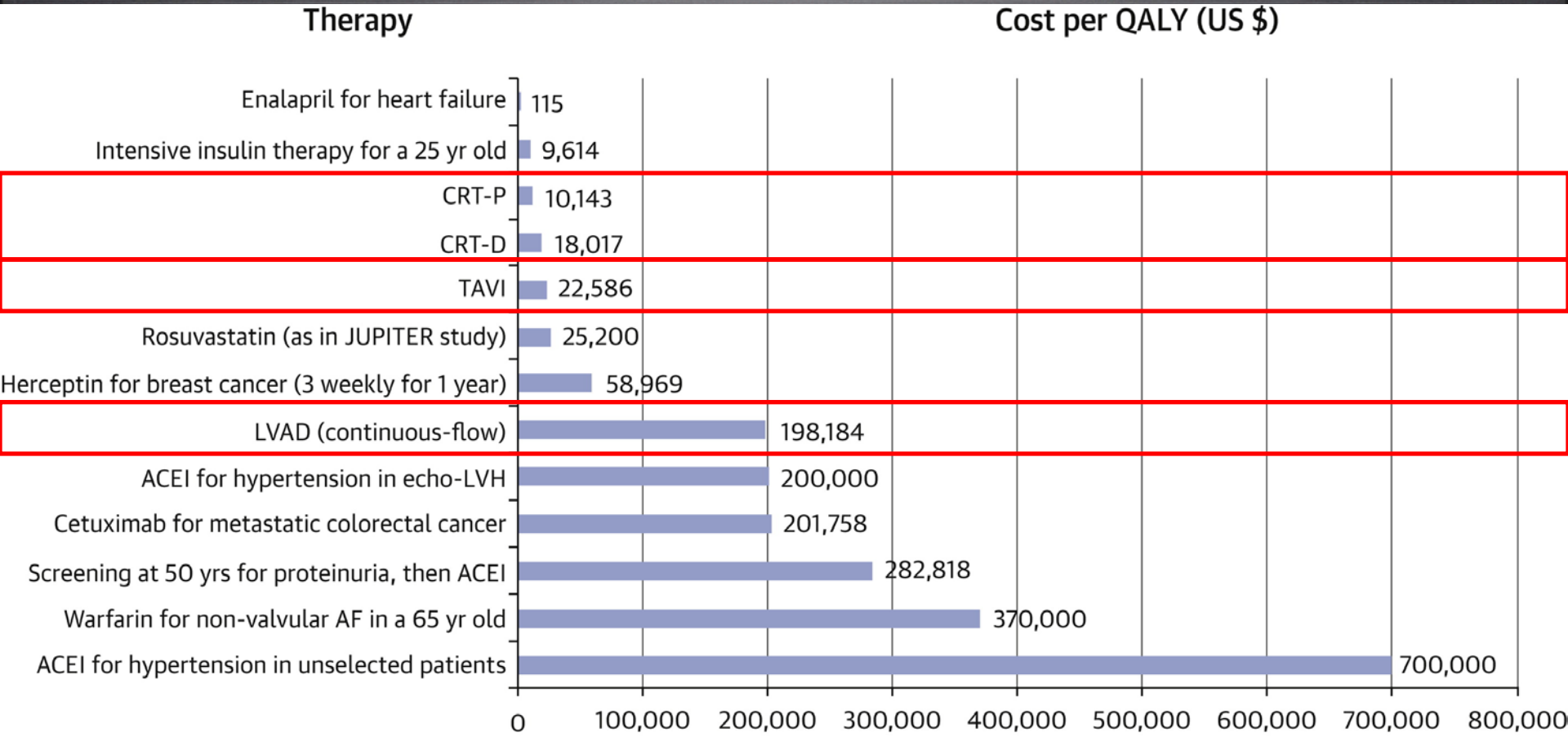
- Expensive technologies
- Questionable benefit in terms of prolongation of life
- Probable benefit in terms of improvement of quality of life for selected therapies

All-Cause Mortality (ITT)
Crossover Patients Censored at Crossover

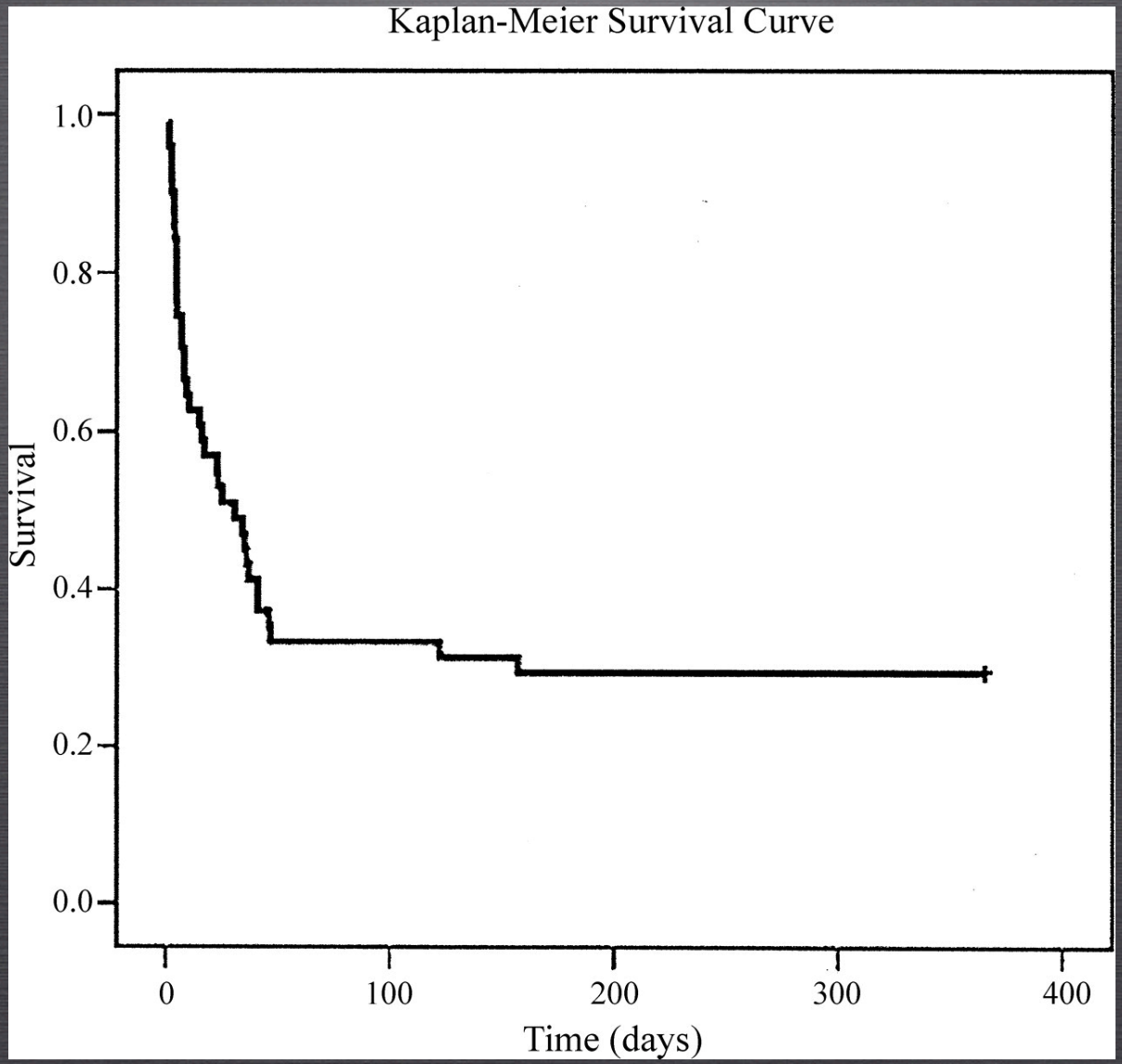


** In an age and gender matched US population without comorbidities, the mortality at 5 years is 40.5%.*

Kapadia. TCT 2014



Leyva *et al*. J Am Coll Cardiol. 2014;64:1047-58



Hsu *et al*. Eur J Cardiothorac Surg. 2010;37:328-33

Where Do We Stop?

- Responsibility lies with medical profession to recognise “hopeless” cases
- Many studies exist predicting poor outcome regardless of therapy
- Requires education of patients and families regarding expectations of care
- Advance care directives allow patients to clearly express wishes prior to illness
- Discussion of options at bedside often limited and prone to “pressure”
- Procedure itself rarely ends in death, recovery is prolonged and often limited

TAVR Cohort C considerations

Frailty, malnutrition, cachexia-

Cardiopulmonary- e.g., LV, MR, PHTN

Lung, liver, and kidney-

Neoplasm-

Dementia/Alzheimer's-

Neurological, stroke-

Other illnesses or disabilities precluding return to semi-independent, meaningful functional existence-

Miller. TCT 2011

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Case 1

- 55 year-old man
- Morbidly obese, hypertensive, smoker, diabetic, renal failure on haemodialysis
- Known coronary artery disease, previously documented as inoperable, for medical management
- Presented with acute MI, underwent emergency PCI and insertion of IABP, transferred to ICU
- Referred for urgent CABG due to ongoing pain

Case 2

- 82 year-old man
- Pulmonary fibrosis on home oxygen, severe COPD, pulmonary hypertension, significant RV dysfunction (cor pulmonale), previous CABG
- Presents with spontaneous pneumothorax, drain inserted with re-expansion of lung, but ongoing air leak with recurrent pneumothorax on cessation of suction
- Referred for VATS pleurodesis

Case 2

- 81 year-old man
- Known aneurysm of ascending aorta (5.0 cm), active decision taken for conservative management given age
- Presents with acute type A aortic dissection
- Referred for emergency surgery from ED