

# **TCT Asia Pacific 2022**

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## **Invasive vs Non-invasive FFR**

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## FFR *(Jung-Min Ahn):*

- strenght:** - gold standard, extremely well validated in all possible groups of patients, clearly improves outcome
- concerns:** - need for hyperemic stimulus (adenosine): completely harmless but naughty chest pain during infusion and in some countries expensive

## NHPR's & iFR: *(Javier Escaned)*

- strenght:** - no need for adenosine, quickly to do
- Concerns:** - only non-inferior to FFR in studies with (very) low risk populations (Define-Flair, SwedeHeart)
- too often false negative in high-risk patients (young patients with proximal severe lesions in a large coronary artery)
- high mortality in iFR group in 2-y follow up of Define-Flair: twice as high as in the FFR-group and equal to angio-guided group in (much more complex) FAME populations

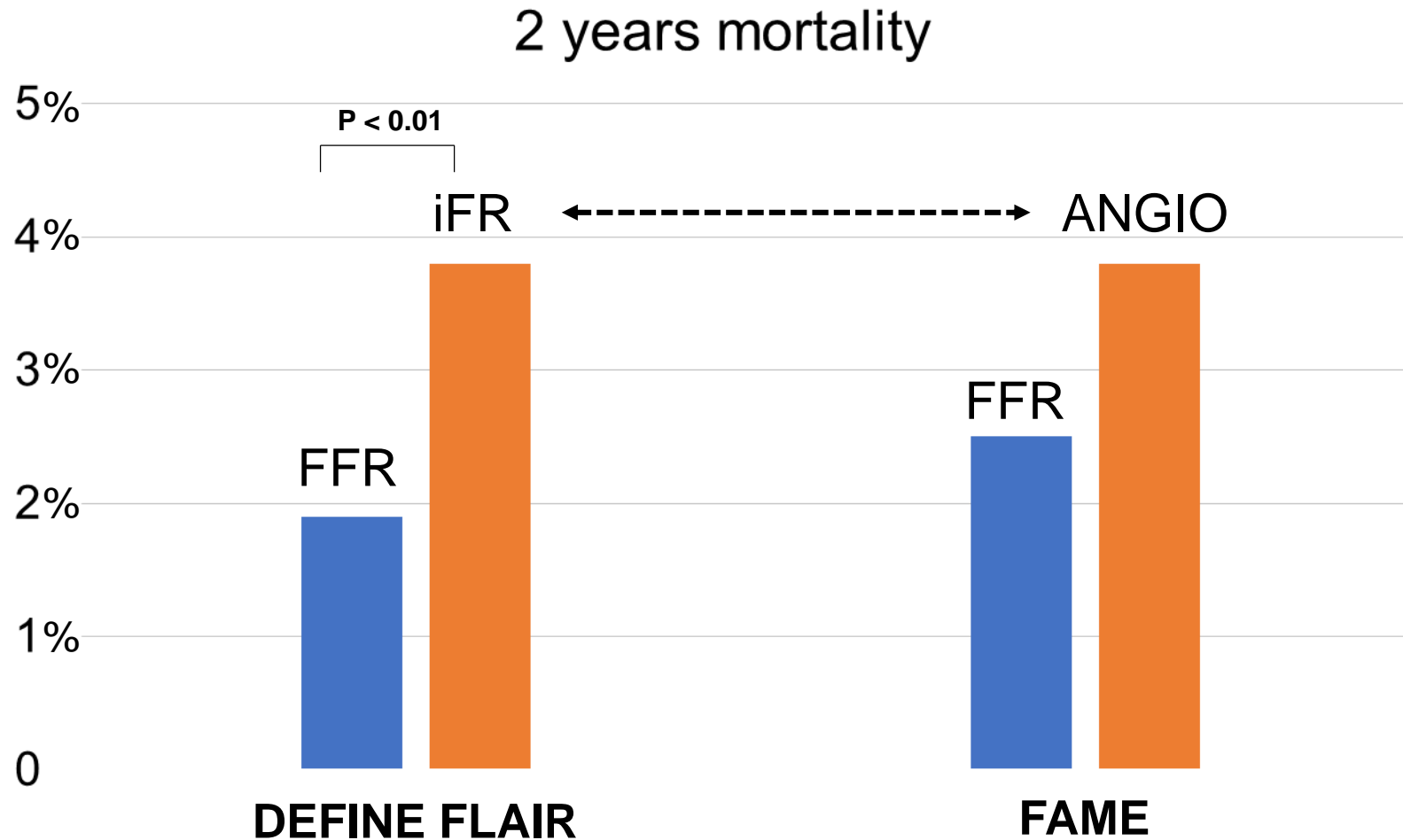
## QFR: *(Bo Xu)*

- strenght:** - no wiring into coronary artery itself *(but still invasive procedure)*; cost-saving
- Concerns:** - validation in favourable anatomy (projections); same disappointment hiding around the corner as with QCA in the late eighties

## CT-FFR: *(Bon-Kwon-Koo)*

- strenght:** - completely non-invasive; very high specificity (you will hardly miss any patient with serious disease)
- cost-saving if applied as gate-keeper; extends coronary CT scanning to a screening device for large populations
- Concern:** - numerical sometimes different from true standard FFR with Pressure Wire

2-year-mortality with iFR- guidance in low-risk  
DEFINE-FLAIR population, was as high as in  
angio-guided group in complex FAME population



*Davies J, TCT 2019; Van Nunen, Lancet 2015;386;1853-1860*

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## CT-FFR: *(Bon-Kwon-Koo)*

- strenght:** - completely non-invasive; very high sensitivity (you will hardly miss any patient with serious disease)
- cost-saving if applied as gate-keeper; extends coronary CT scanning to a screening device for large populations *(compared to regular CCT without CT-FFR)*
- Concern:** - numerical sometimes different from true standard FFR with Pressure Wire

# Primary Endpoint

## Invasive Catheterization w/o Obstructive CAD

### Planned NI Test

■ No-Obs CAD ■ Obs CAD ■ No ICA

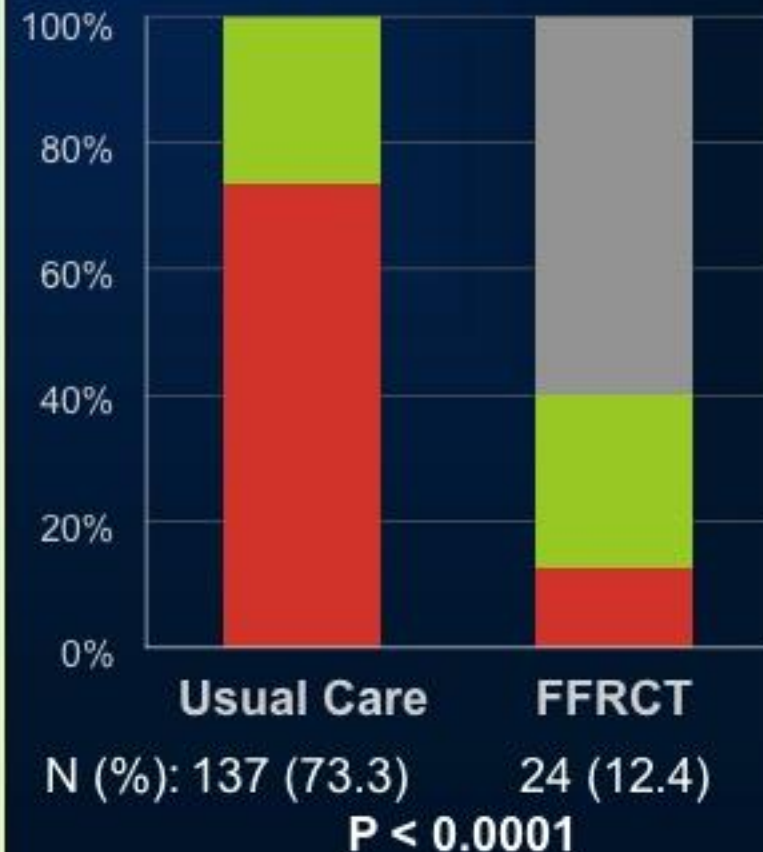
- in the FFRct group 61 % of the patients did not required ICA
- but in those 39% who underwent ICA, the number of patient with obstructive coronary disease, was similar to the ICA group !

→ *specificity of FFRct strategy equal to ICA, but specificity much higher (close to 100%)*

PLATFORM

### Planned ICA

■ No-Obs CAD ■ Obs CAD ■ No ICA



true positive

false positive

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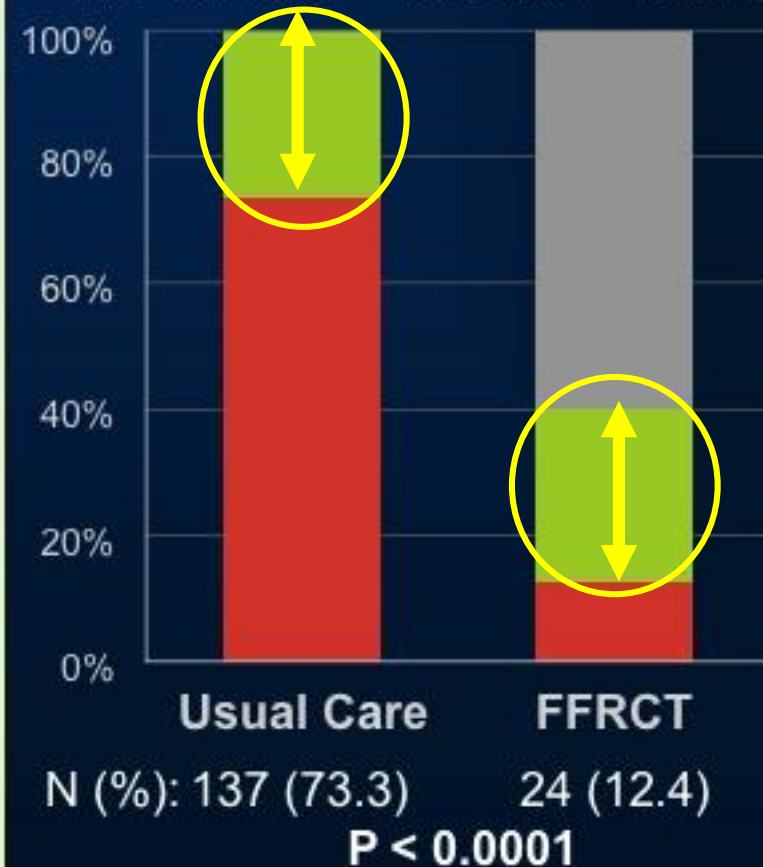
- in the FFRct group 61 % of the patients did not required ICA
- but in those 39% who underwent ICA, the number of patient with obstructive coronary disease, was similar to the ICA group !

→ *sensitivity of FFRct strategy equal to ICA, but specificity much higher*

PLATFORM

### Planned ICA

■ No-Obs CAD ■ Obs CAD ■ No ICA



true positive

false positive

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**Panellists:**

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Frederik Zimmermann, Catharina Hospital, Eindhoven, The Netherlands