



Centro di Riferimento per l'Epidemiologia  
e la Prevenzione Oncologica in Piemonte

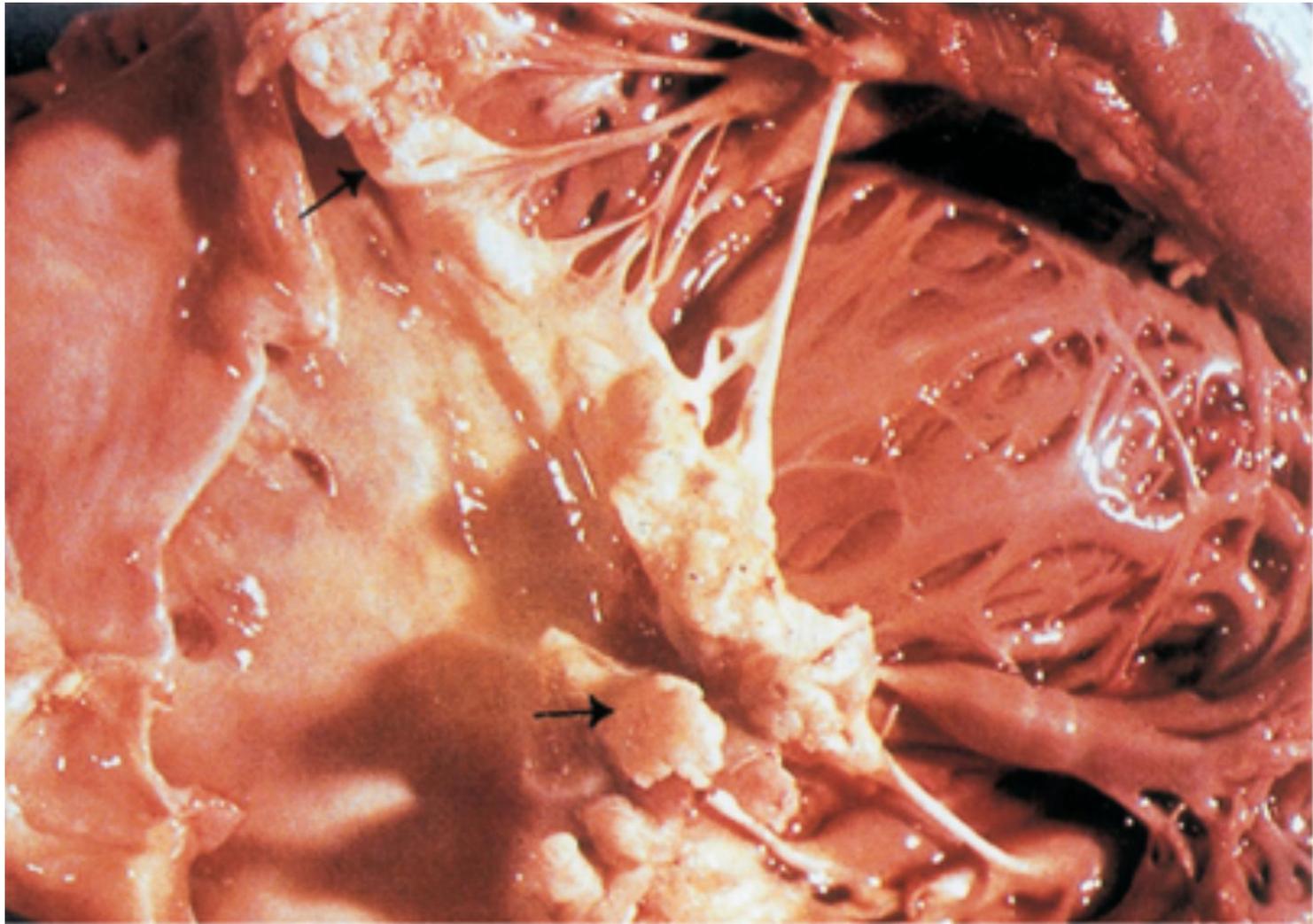
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# **Timing della chirurgia e mortalità in pazienti affetti da endocardite infettiva su valvola aortica o mitralica: uno studio multicentrico (Registro Italiano delle Endocarditi infettive – RIEI)**

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# Background

- IE is relatively rare disease (4 to 7 cases per 100,000), with potentially serious complications (heart damage, embolic events)
- Diagnostic delay and treatment uncertainty may increase mortality
- In addition to antimicrobial therapy, **heart surgery was associated to reduced mortality** in several studies, but available evidence is of low quality (mainly observational studies at **high risk of bias** and only one small RCT).
- Guidelines recommend early surgery in selected cases, but there is **no clear definition of optimal timing**



Source: D. L. Kasper, A. S. Fauci, S. L. Hauser, D. L. Longo, J. L. Jameson, J. Loscalzo: Harrison's Principles of Internal Medicine, 19th Edition.  
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# Treatment of infective endocarditis (IE)

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## PRACTICE GUIDELINE

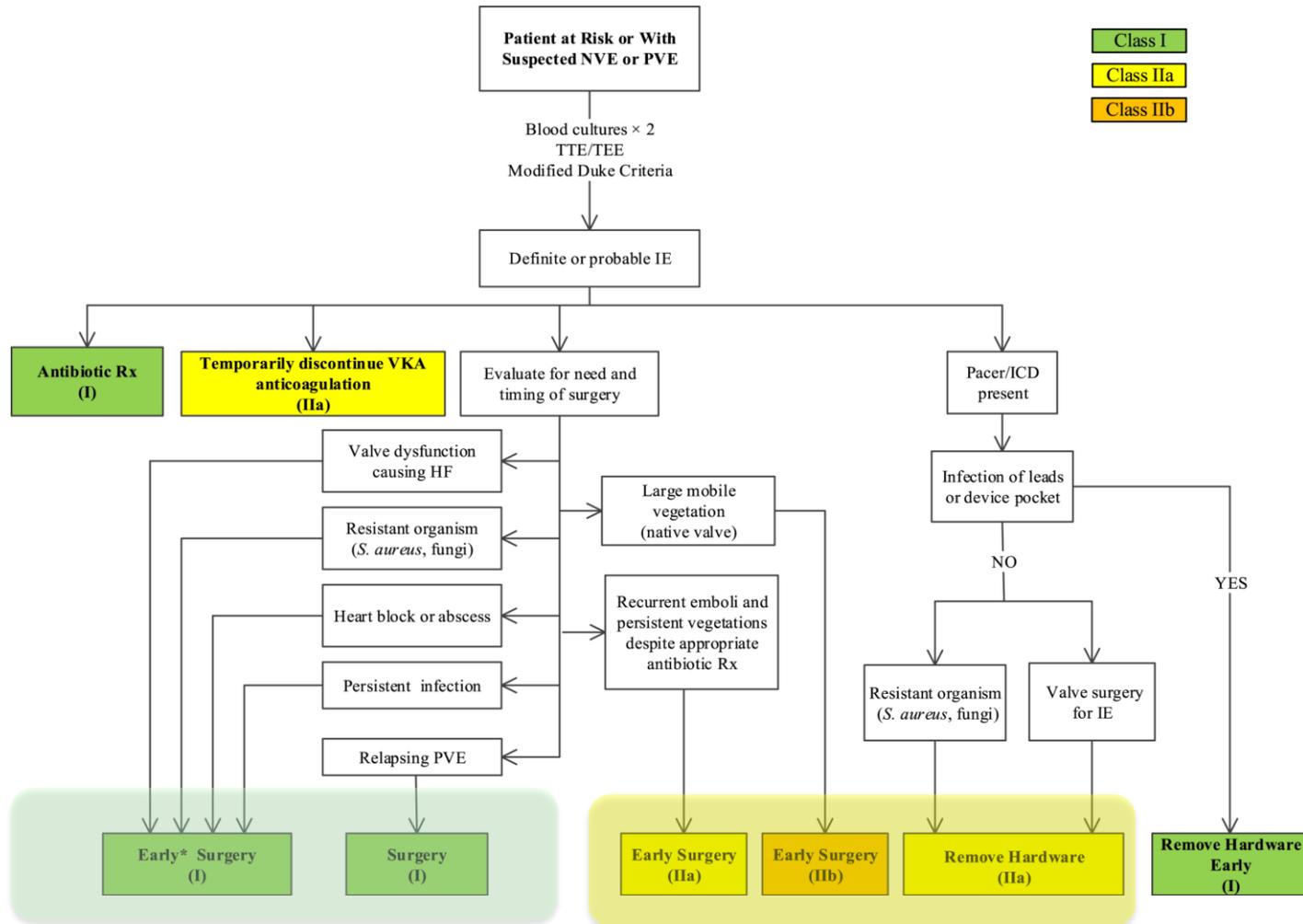
### **2014 AHA/ACC Guideline for the Management of Patients With Valvular Heart Disease: Executive Summary**



A Report of the American College of Cardiology/American Heart Association  
Task Force on Practice Guidelines

*Developed in Collaboration With the American Association for Thoracic Surgery,  
American Society of Echocardiography, Society for Cardiovascular Angiography and Interventions,  
Society of Cardiovascular Anesthesiologists, and Society of Thoracic Surgeons*

# Treatment of infective endocarditis (IE)



\* **Early surgery:** during initial hospitalization before completion of a full therapeutic course of antibiotics

# Study aims

- To compare the overall survival between two treatment strategies in patients with left side IE:
  - **early surgery**
  - **late surgery/medical therapy**
- To assess the impact on the results of:
  - **indication bias**
  - **immortal time bias**

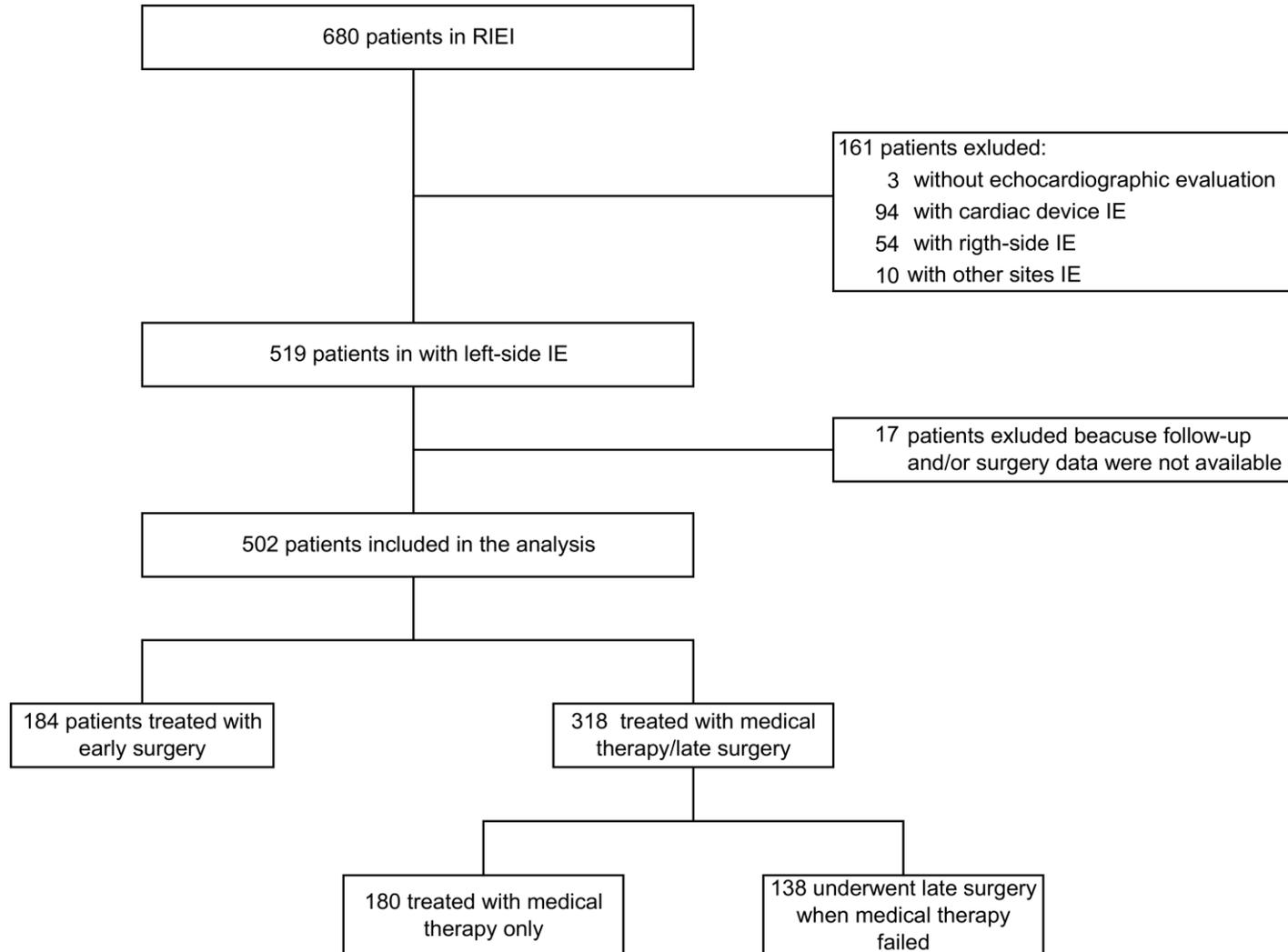
# Methods (1)

- RIEI:
  - 17 Italian centers from July 2007 to December 2010
  - collected data:
    - socio-demographic and clinical data at IE diagnosis
    - medical and surgical treatments
    - complications and vital status during the 12 months after diagnosis
- Inclusion/exclusion criteria for the present study:
  - only patients with a new diagnosis of left side IE
  - excluded patients with cardiac devices

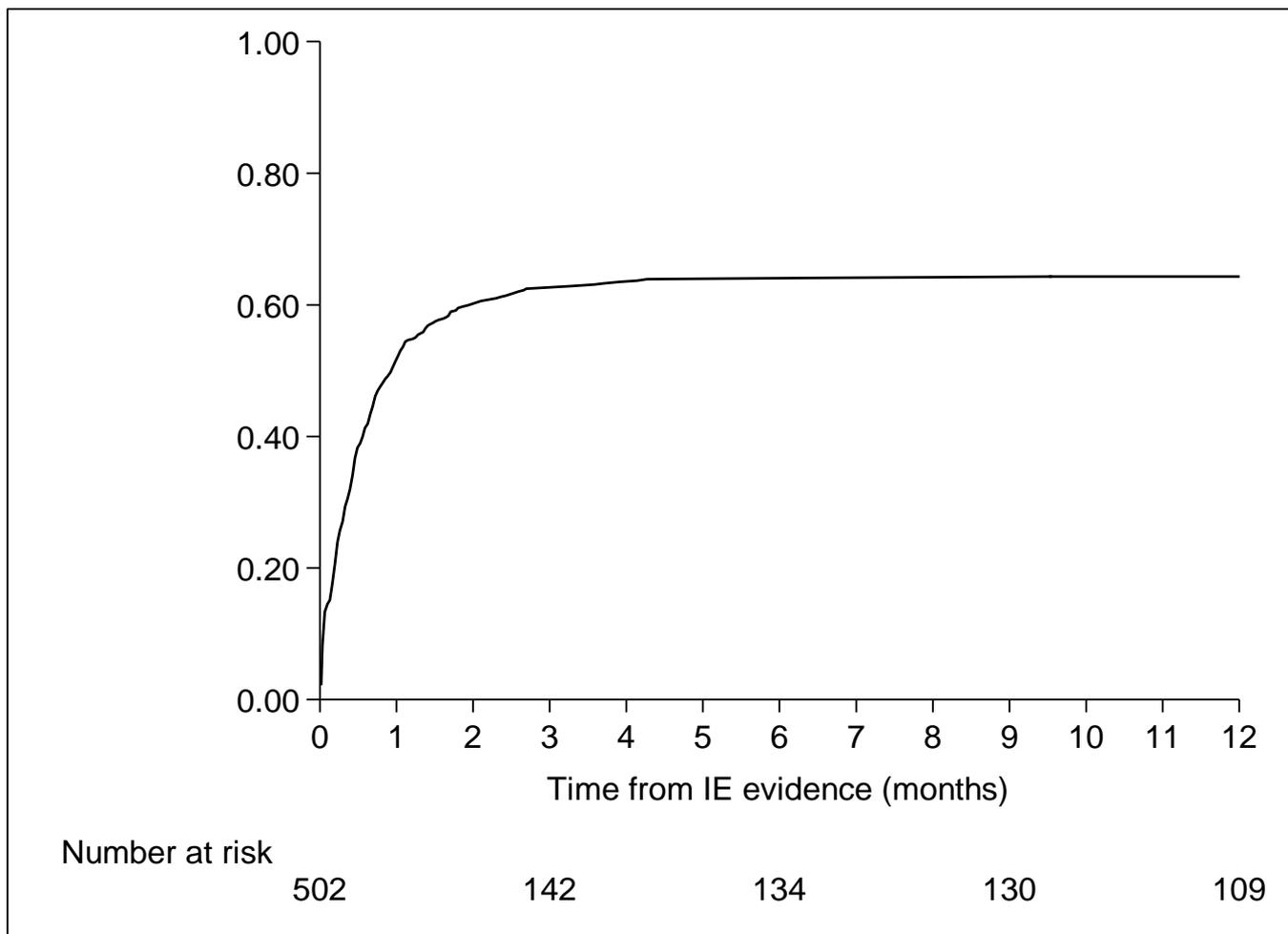
# Methods (2)

- Estimation of the “**surgery effect**” on survival, including surgery in multivariable Cox models in 3 different ways:
  - **surgery at any time;**
  - **early surgery ( $\leq 14$  days from IE diagnosis);**
  - **early surgery as time-dependent variable.**
- Hazard Ratios adjusted for potential confounders (factors associated to early surgery) selected with a logistic model:
  - Age, sex, comorbidity, severity of IE, acute cardiac complications, causative microorganism, suspected etiology, involved valve

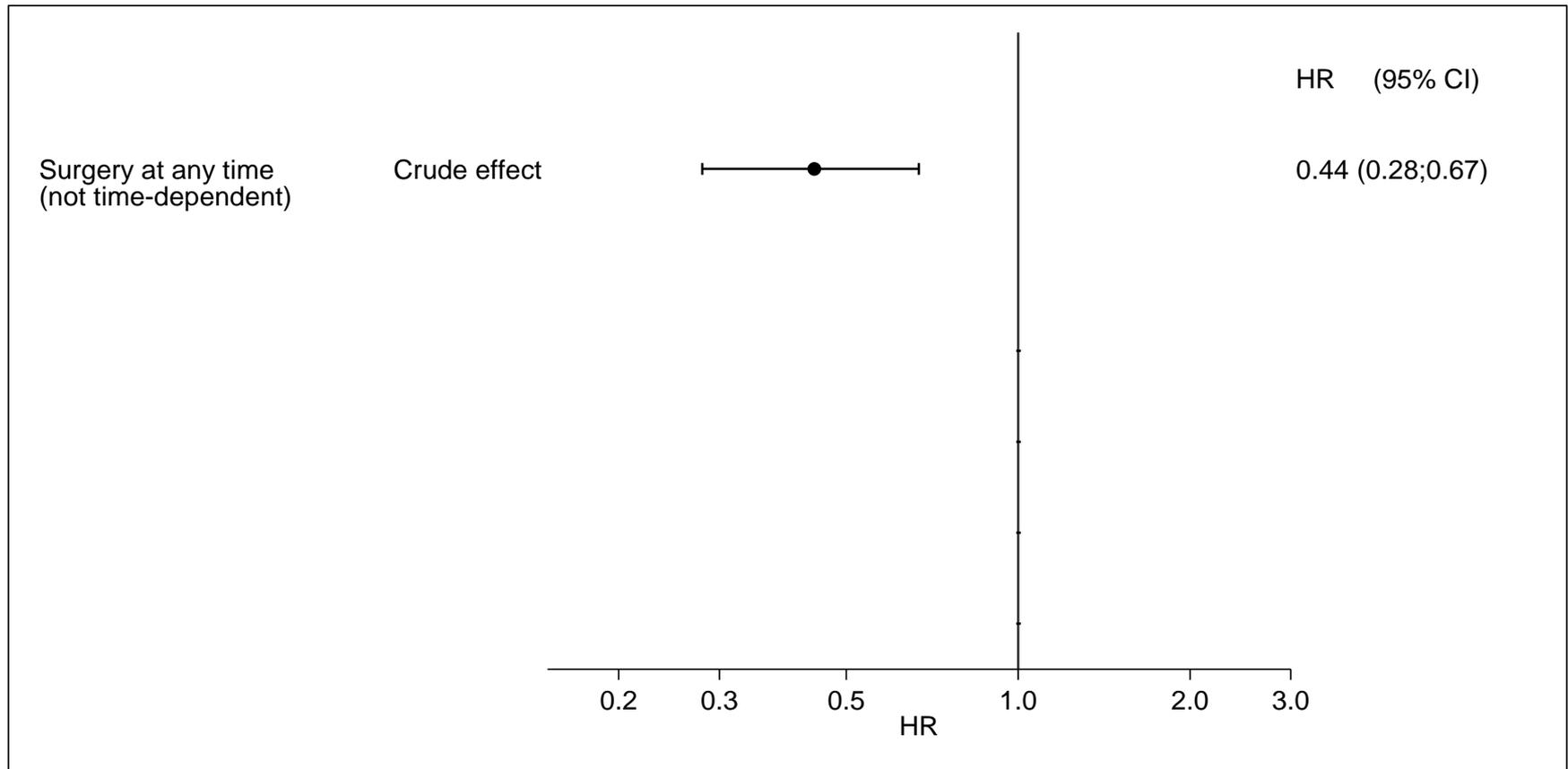
# Results – Flow Chart



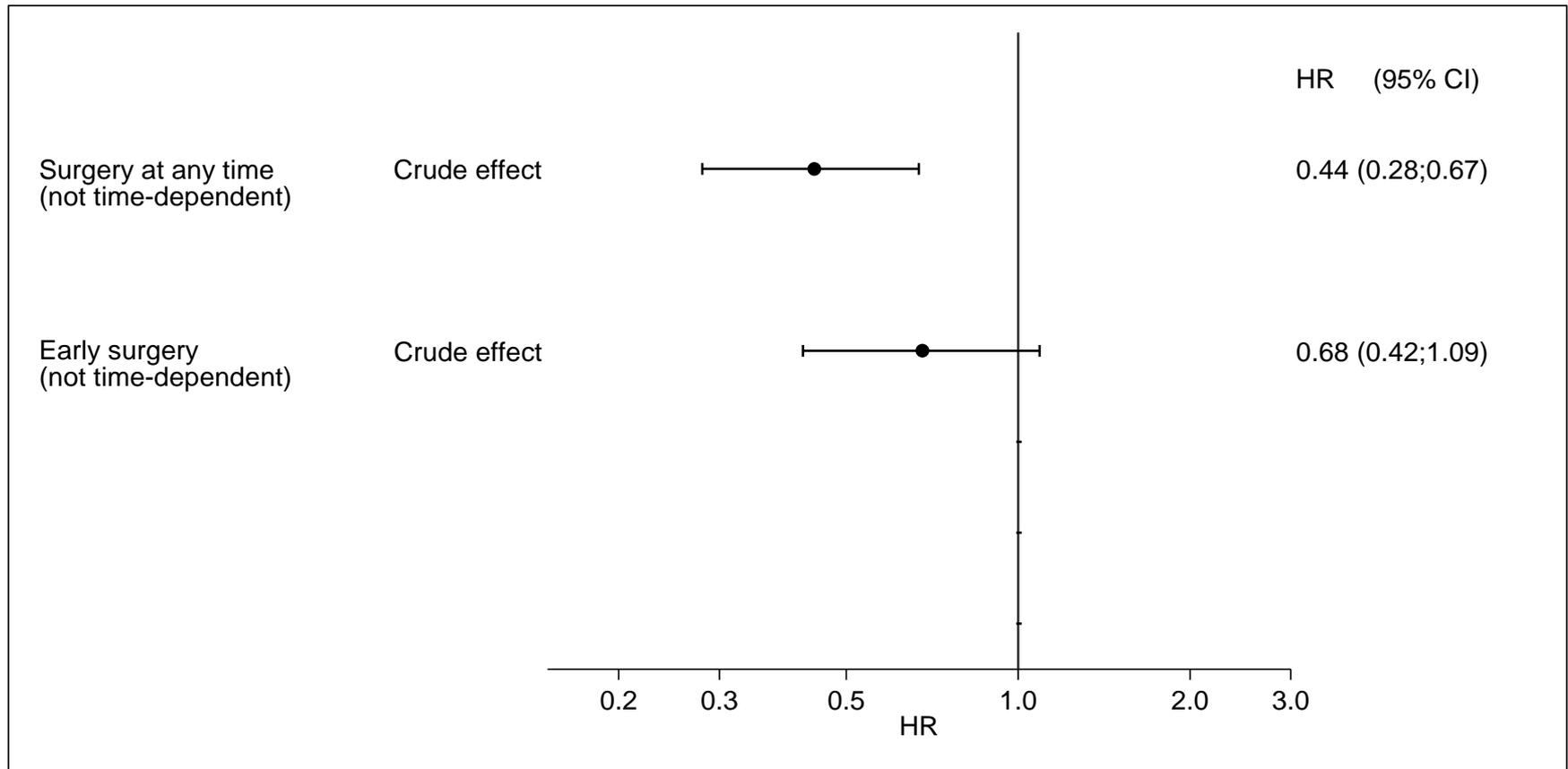
## Results – IE cumulative incidence of surgery



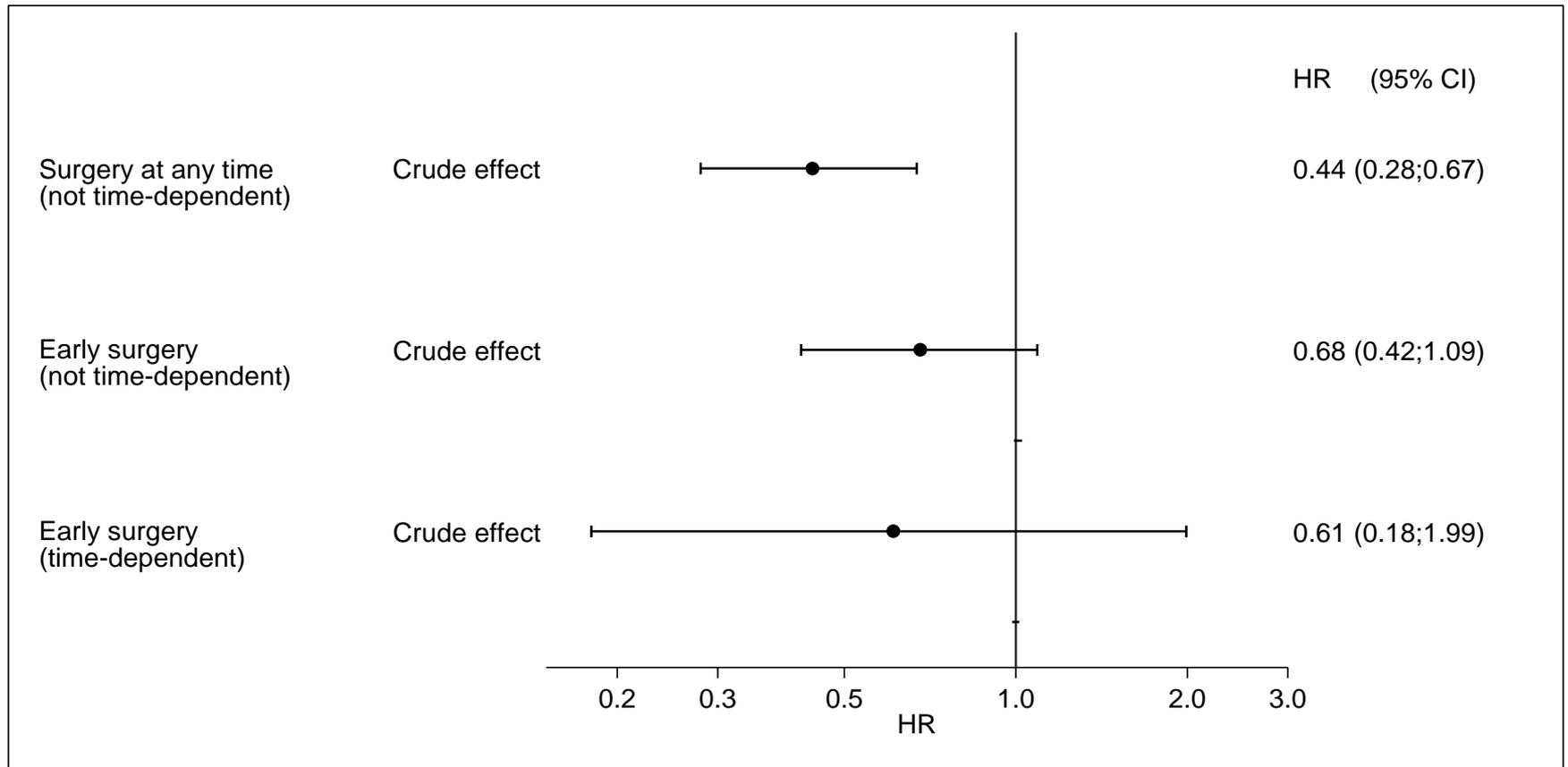
# Results – Surgery effects on OS



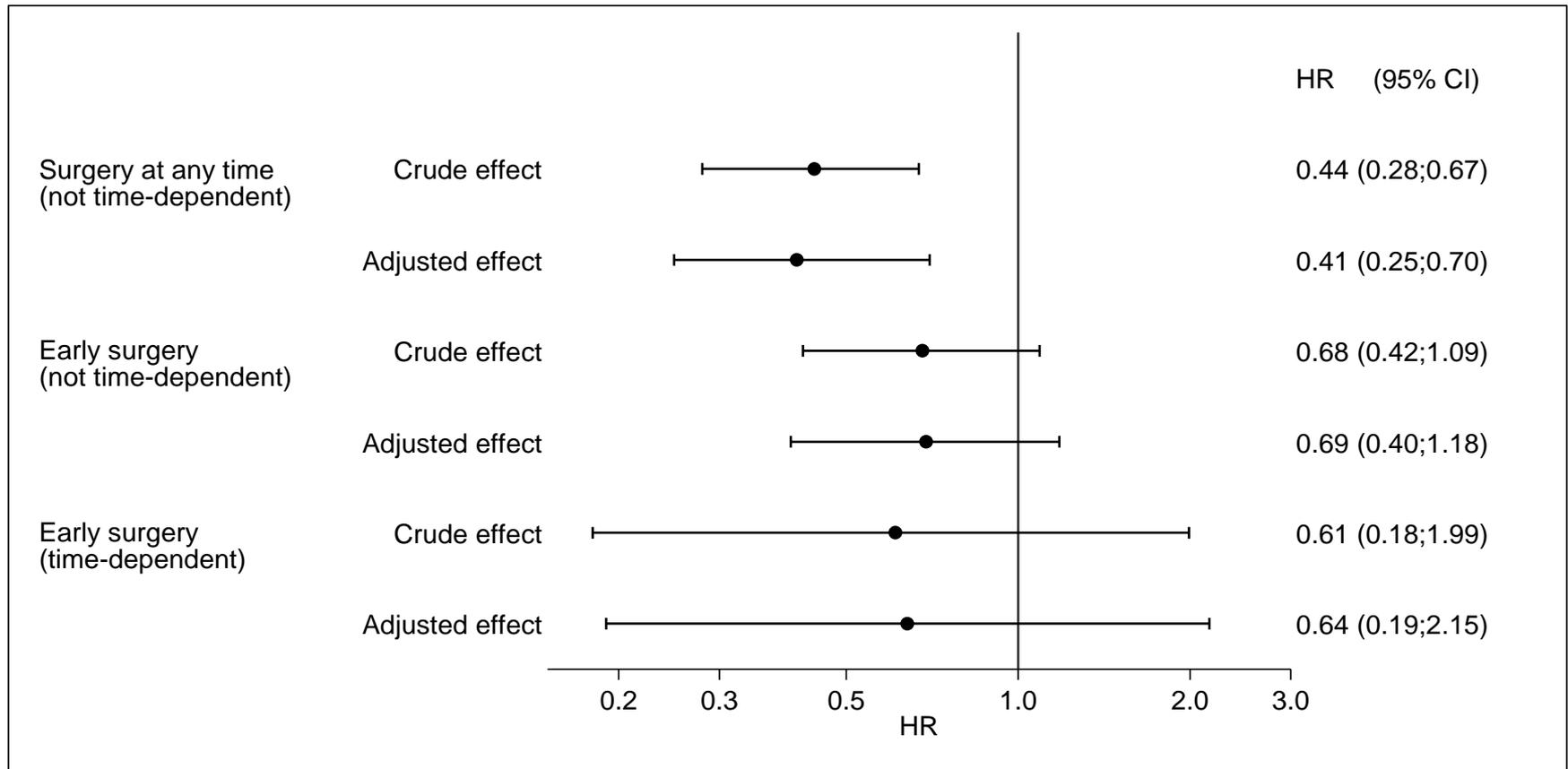
# Results – Surgery effects on OS



# Results – Surgery effects on OS



# Results – Surgery effects on OS



# Conclusions

- Surgery seems beneficial in these patients, but its effect becomes weaker considering only early surgery, and less precise when analysed as a time dependent variable
- No evidence of confounding by indication
- Need of high quality confirmation studies
- **EARLY** is a large, pragmatic randomized trial, aiming to confirm a positive balance of benefits vs risks and costs of an early (< 72 h) surgical treatment



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Tutti gli autori dichiarano assenza di conflitto di interessi



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**Grazie per l'attenzione!**