SMART-MI trial

#ESCCongress

Implantable cardiac monitors in high-risk post-infarction patients with cardiac autonomic dysfunction and moderately reduced left ventricular ejection fraction - A randomised trial

Conclusion

Remote monitoring of implantable cardiac monitors (ICMs) is highly effective for early detection of serious arrhythmias in high-risk post-infarction patients with cardiac autonomic dysfunction and moderately reduced ejection fraction.

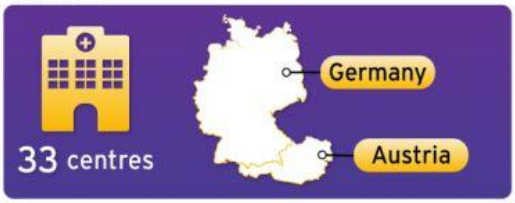
Background

Patients with severely reduced left ventricular ejection fraction (LVEF≤ 35%) after MI are candidates for prophylactic implantation of a cardioverter defibrillator. However, the vast majority of fatal and non-fatal complications after MI occur in patients with LVEF above 35%, for whom no specific preventive measures exist.

Study objectives

Previous studies in post-MI patients with reduced LVEF suggested that CV complications are preceded by arrhythmic events. However, as most of these arrhythmias are asymptomatic or subclinical, their detection escapes conventional follow-up. The SMART-MI trial examined whether ICMs could provide early detection of such arrhythmias.

Where?



Who and what?

The study enrolled post-MI patients with:
- LVEF 36-50%
- cardiac autonomic dysfunction

400 patients

randomised 1:1

ICM implantation and remote monitoring

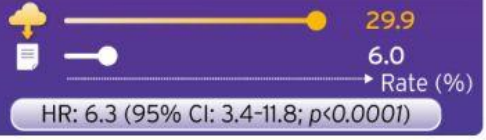
Conventional follow-up

Detection of serious arrhythmic events

Median follow up → 21 months

Primary endpoint

Time to detection of serious arrhythmic events



HR: 6.3 (95% CI: 3.4-11.8; *p<0.0001*)

Cumulative 3-year detection rate of serious arrhythmic events

Secondary endpoint

Major adverse cardiac and cerebrovascular events (MACCEs)

HR: 6.8 (95% CI: 2.9-16.2; *p<0.001*)

HR: 7.3 (95% CI: 2.4-22.8; *p<0.001*)

Detection of serious arrhythmic events strongly predicted subsequent MACCE in both groups

Positive predictive accuracy

61% 62% *p=0.990*

Sensitivity in detection

61% 20% *p=0.007*

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