Are there socioeconomic differences in the outcomes of coronary revascularisations – the case of Finland in 1998-2010
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Background
Earlier studies have repeatedly reported socioeconomic differences in coronary heart disease (CHD) incidence and mortality. Studies have further reported differences in treatment of CHD, e.g., coronary revascularisations but less is known about differences in treatment outcomes. This study examined trends in income group differences in outcomes of coronary revascularisations among men and women in Finland from 1998 to 2010.

Methods
Data of first revascularisations for 45-84 year-old Finnish population were obtained from the Care Register in 1998 to 2009 and followed until the end of 2010. Income data was individually linked to them and adjusted for family size. We studied four outcome measures: major adverse cardiac event (MACE) during 30 days and after 30 days, subsequent revascularisation and coronary mortality. We calculated age-standardized rates with direct method and examined differences between income groups with Cox regression models.

Results
Altogether 69,076 men and 27,498 women underwent revascularisation in 1998-2009. Among men of the 1998 cohort, 41% suffered MACE during 30 days after the operation and 30% of the 2009 cohort. For women the figures were 35% and 28%. CHD mortality within one year was 2% in both cohorts among both genders. Among men 9% underwent revascularisation during one year in 1998 and 12% in 2009. Among women the figures were 14% and 12%. When modelling the differences in the outcomes during the study period controlling for age, comorbidities, year and previous MI a stepwise inverse gradient was found in MACE incidence within 30 days and CHD mortality among both genders. Compared to the highest income quintile, the hazard ratio (HR) from Cox regression in the lowest income group was 1.46 (1.39-1.52) for risk of MACE within 30 days among men and 1.45 (1.33-1.59) among women. The differences in risk of MACE after 30 days were smaller. HR for CHD mortality risk was 1.80 (1.62-2.00) among men and 1.81 (1.45-2.26) among women in the lowest quintile. No differences were found in revascularisations. All income group differences remained stable from 1998 to 2010.

Conclusions
More attention should be paid to persons with low socioeconomic position in health care to prevent adverse outcomes among them.

Key messages
- A stepwise gradient of better outcomes of coronary revascularisation by increasing income was found in Finland that persisted from 1998 to 2010.
- More attention should be focused to low-income patients undergoing revascularisation to prevent adverse outcomes of coronary care.