

BACKGROUND

- Earlier studies seem to indicate that parenthood, in particular of younger children, increases the risk for myocardial infarctions
- The **aim** of this study was to analyze **whether parenthood is correlated with the occurrence of myocardial infarctions in Austria**
- Setting: Austrian health care system is characterized by a mandatory health insurance (Bismarck type)

MATERIAL AND METHODS

- As data source we used pseudonymized **claims data** of 2006 and 2007 provided by Austrian social security institutions covering 97% of Austria's population of about 8 million
- The analysis was done using a cohort study design

Step 1: Identification of parents

- Database lacks genealogical information, thus parenthood had to be estimated from co-insurance of dependents
- Co-insured children and partners were heuristically distinguished based on their age in relation to the insured person's age
- Co-insured persons were defined as children if they were at most 27 years old and at least 18 years younger than the insured person
- Co-insured persons were considered as partners if they were at most 17 years younger or older than the insured person
- We confined our study cohort to co-insured couples (compare figure 1) to avoid misclassification of persons who appear to be childless because their children are co-insured by their self-insured partner (there are no links between self-insured partners in the database)

Step 2: Identification of myocardial infarction cases

- Myocardial infarction was identified via the following ICD10 diagnoses from hospital discharges
- ICD10 **I21** "ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction"
- ICD10 **I22** "Subsequent ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction"

Step 3: Comparison of exposed and control group

- We stratified patients according to their age and gender
- Myocardial infarction rates were calculated and compared within subgroups
- As covariates we considered diagnoses, medication prescriptions, and ambulatory contacts

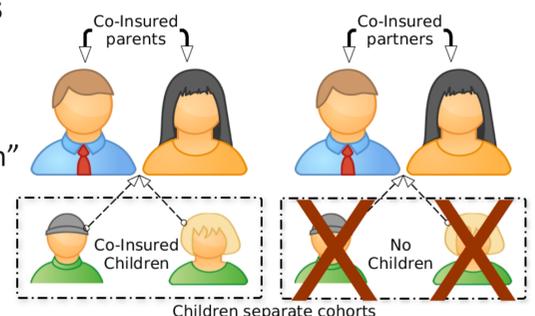


Fig. 1: Definition of cohorts

RESULTS

- We identified about 3.3 million persons with a co-insurance relation, 1.8 of which were classified as children
- Our **exposed group** consisted of 789,054 parental couples aged 30 to 60 years, where one partner co-insured the other partner and at least one child
- Our **control group** consisted of 317,010 childless couples aged 30 to 60 years, where one partner co-insured the other partner and no co-insured child was documented
- Figure 6 shows the comparison of the myocardial infarction rates between the two groups

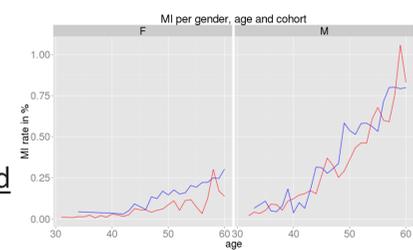


Fig. 6: MI per gender, age, cohort

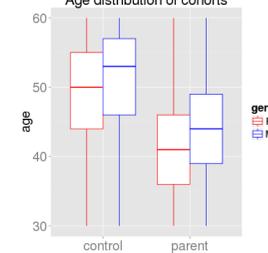
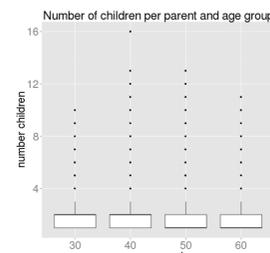
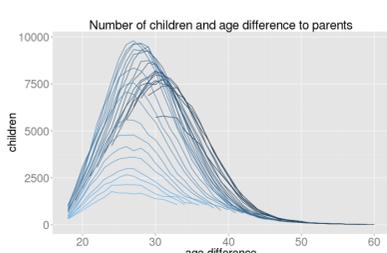


Fig. 2: Age difference parents and children Fig. 3: Number of children Fig. 4: Age distribution of cohorts

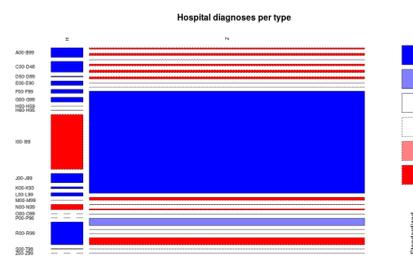


Fig. 5: Distribution of ICD10 diagnoses

DISCUSSION

- Our **results do not support the assumption** that parenthood represents a risk factor for myocardial infarctions
- Identification of children seems to be plausible considering the distribution of the age difference to their parents (compare figure 2)
- The parent group was noticeably younger than the control group (compare figure 4), which is plausible as we considered only younger children of at most 27 years
- The analysis of covariates does not show further insights to the assumption, but gives insights in e.g. comorbidity of myocardial infarction (compare figure 5)
- Our analysis is limited by (i) the heuristic identification of parenthood, especially regarding older couples, and (ii) the forced confinement to co-insured couples, as self-insured couples or singles may behave differently

