Introduction
Hodgkin lymphoma (HL) survivors suffer from an excess risk of cardiac disease (CD) due to radiation and anthracyclines. However, CD is also associated with other risk factors. The purpose of our study was to evaluate the impact of treatment and patient characteristics on the risk of subsequent CD among HL patients treated in nine randomized trials from 1964 to 2004 by the EORTC and GELA (now LYSA).

Methods
Incidence of CD was reported during follow-up and through a patient-reported questionnaire (LSQ). Co-morbidities were registered at LSQ completion. A multivariate Cox proportional hazards regression model on first CD was fitted on treatment variables as well as patient characteristics at treatment start. Data from the H1 to H8 trials were used to build the model; model validation was performed based on H9 trial data using the C-index as measure of discrimination.

Results
1919 patients responded to the LSQ. 416 patients experienced a first event (cf. Table I for patient and treatment characteristics). The full and reduced Cox PH model is shown in Table II. The resulting linear predictor was \[ LP = 0.017 \times \text{heart dose} \] + \[ 0.002 \times \text{dose anthracyclines} \] + \[ 0.037 \times \text{age} \] + \[ 0.053 \times \text{BMI} \]. The C-index was moderate at 0.57 (95% CI: 0.39-0.74).

Conclusions
Following treatment for HL, the subsequent risk of CD is influenced by radiation dose to the heart, the cumulative dose of anthracycline, and age and BMI at treatment start. However, the overall cardiac risk is only partly explained by treatment exposure. The poor model performance may be explained by important post-treatment events such as later occurrence of cardiac risk factors.