α-Linolenic acid, linoleic acid and heart failure in women.

α-Linolenic acid (18 : 3n-3) intake and linoleic acid (18 : 2n-6) intake have been associated with lower rates of CHD, though results have not been consistent. The relationship of these fatty acids with incident heart failure (HF) is not well established. We examined the hypothesis that women with higher intakes of 18 : 3n-3 and 18 : 2n-6 would have lower rates of HF hospitalisation and mortality. We measured 18 : 3n-3 and 18 : 2n-6 intake in 36,234 Swedish Mammography Cohort participants aged 48-83 years using FFQ and followed participants through Swedish inpatient and cause-of-death registers from 1 January 1998 until 31 December 2006. Cox models were used to calculate incidence rate ratios (RR) and 95 % CI. Because of multicollinearity, 18 : 3n-3 and 18 : 2n-6 were examined separately. Over 9 years, 596 women were hospitalised and fifty-five died due to HF. In models accounting for age and other covariates, the RR for HF comparing the top quintile of 18 : 3n-3 (median 1·50 g/d) with the bottom quintile (median 0·88 g/d) was 0·91 (95 % CI 0·71, 1·17, P(trend) = 0·41). The RR comparing the top quintile of 18 : 2n-6 (median 7·8 g/d) with the bottom quintile (median 4·6 g/d) was 1·14 (95 % CI 0·88, 1·46, P(trend) = 0·36). We did not find evidence for the interaction of 18 : 3n-3 and 18 : 2n-6 with each other or with long-chain n-3 fatty acids. In conclusion, these data do not support our hypothesis that 18 : 3n-3 and 18 : 2n-6 are associated with HF. However, these results may not be generalisable to populations with higher intakes of 18 : 3n-3.