

Prevalence of renal impairment in a general population: results of the Swiss SAPALDIA cohort study

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Background: Impaired renal function is evolving as an independent marker of risk of cardiovascular morbidity and mortality. The prevalence of impaired renal function in the Swiss general population is unknown.

Methods: SAPALDIA comprises a random sample of the Swiss population established in 1991, originally to investigate the health effects from long term exposure to air pollution. Participants were reassessed in 2002/3 and blood measurements were obtained (n=6317). Renal function was estimated using the the Cockcroft Gault equation and the modified MDRD (four-component) equation incorporating age, race, gender, and serum creatinine level.

Results: The estimated prevalence for impaired renal function (eGFR below 60ml/min/1.73m²) differed substantially between men and women, particularly at higher ages, and amounted to 13 % (95%CI: 10%, 16%) and 36% (95%CI: 32%, 40%) in men and women, respectively, being 65 years or older. Smoking, obesity, blood lipids levels, high systolic blood pressure, hyperuricemia were all more common in men when compared with women. These cardiovascular risk factors were also associated independently with creatinine both in women and men. Women were less likely to receive cardiovascular drugs, in particular ACE-inhibitors and beta-blockers when compared to men of the same age.

Conclusion: Moderate renal impairment seems to be prevalent in the general population, with an apparent excess in females which is not explained by conventional cardiovascular risk factors. The unexpected finding questions the validity of the prediction equations in particular in females.