

Abstracts' Service

Fatal and Nonfatal Outcomes, Incidence of Hypertension, and Blood Pressure Changes in Relation to Urinary Sodium Excretion

Katarzyna Stolarz-Skrzypek, Tatiana Kuznetsova, Lutgarde Thijs, Valerie Tikhonoff, Jitka Seidlerova, Tom Richart, Yu Jin, Agnieszka Olszanecka, Sofia Malyutina, Edoardo Casiglia, Jan Filipovsky, Kalina Kawecka-Jaszcz, Yuri Nikitin, Jan A. Staessen, for the European Project on Genes in Hypertension (EPOGH) Investigators

JAMA 2011;305:1777-1785

Context. Extrapolations from observational studies and short-term intervention trials suggest that population-wide moderation of salt intake might reduce cardiovascular events.

Objective. To assess whether 24-hour urinary sodium excretion predicts blood pressure (BP) and health outcomes.

Design, Setting, and Participants. Prospective population study, involving 3681 participants without cardiovascular disease (CVD) who are members of families that were randomly enrolled in the Flemish Study on Genes, Environment, and Health Outcomes (1985-2004) or in the European Project on Genes in Hypertension (1999-2001). Of 3681 participants without CVD, 2096 were normotensive at baseline and 1499 had BP and sodium excretion measured at baseline and last follow-up (2005-2008).

Main Outcome Measures. Incidence of mortality and morbidity and association between changes in BP and sodium excretion. Multivariable-adjusted hazard ratios (HRs) express the risk in tertiles of sodium excretion relative to average risk in the whole study population.

Results. Among 3681 participants followed up for a median 7.9 years, CVD deaths decreased across increasing tertiles of 24-hour sodium excretion, from 50 deaths in the low (mean, 107 mmol), 24 in the medium (mean, 168 mmol), and 10 in the high

excretion group (mean, 260 mmol; $P < .001$), resulting in respective death rates of 4.1 % (95% confidence interval [CI], 3.5%-4.7%), 1.9% (95% CI, 1.5%-2.3%), and 0.8% (95% CI, 0.5%-1.1 %). In multivariable-adjusted analyses, this inverse association retained significance ($P = .02$): the HR in the low tertile was 1.56 (95% CI, 1.02-2.36; $P = .04$). Baseline sodium excretion predicted neither total mortality ($P = .10$) nor fatal combined with nonfatal CVD events ($P = .55$). Among 2096 participants followed up for 6.5 years, the risk of hypertension did not increase across increasing tertiles ($P = .93$). Incident hypertension was 187 (27.0%; HR, 1.00; 95% CI, 0.87-1.16) in the low, 190 (26.6%; HR, 1.02; 95% CI, 0.89-1.16) in the medium, and 175 (25.4%; HR, 0.98; 95% CI, 0.86-1.12) in the high sodium excretion group. In 1499 participants followed up for 6.1 years, systolic blood pressure increased by 0.37 mm Hg per year ($P < .001$), whereas sodium excretion did not change (-0.45 mmol per year, $P = .15$). However, in multivariable-adjusted analyses, a 100-mmol increase in sodium excretion was associated with 1.71 mm Hg increase in systolic blood pressure ($P < .001$) but no change in diastolic BP.

Conclusions. In this population-based cohort, systolic blood pressure, but not diastolic pressure, changes over time aligned with change in sodium excretion, but this association did not translate into a higher risk of hypertension or CVD complications. Lower sodium excretion was associated with higher CVD mortality.

Association Between Adoption of Evidence-Based Treatment and Survival for Patients With ST Elevation Myocardial Infarction

Tomas Jernberg, Per Johanson, Claes Held, Bodil Svennblad, Johan Lindback, Lars Wallentin for SWEDEHEART/RIKS-HIA

JAMA 2011;305(16):1677-1684

Context. Only limited information is available on the speed of implementation of new evidence-based and guideline-recommended treatments and its

association with survival in real life health care of patients with ST-elevation myocardial infarction (STEMI).

Objective. To describe the adoption of new treatments and the related chances of short- and long-term survival in consecutive patients with STEMI in a single country over a 12-year period.

Design, Setting, and Participants. The Register of Information and Knowledge about Swedish Heart Intensive Care Admission (RIKS-HIA) records baseline characteristics, treatments, and outcome of consecutive patients with acute coronary syndrome admitted to almost all hospitals in Sweden. This study includes 61 238 patients with a first-time diagnosis of STEMI between 1996 and 2007.

Main Outcome Measures. Estimated and crude proportions of patients treated with different medications and invasive procedures and mortality over time.

Results. Of evidence based-treatments, reperfusion increased from 66% (95% confidence interval [CI], 52%-79%) to 79% (95% CI, 69%-89%; $P < .001$), primary percutaneous coronary intervention from 12% (95% CI, 11%-14%) to 61% (95% CI, 45%-77%; $P < .001$), and revascularization from 10% (96% CI, 6%-14%) to 84% (95% CI, 73%-95%; $P < .001$). The use of aspirin,

clopidogrel, β -blockers, statins, and angiotensin-converting enzyme (ACE) inhibitors all increased: clopidogrel from 0% to 82% (95% CI, 69%-95%; $P < .001$), statins from 23% (95% CI, 12%-33%) to 83% (95% CI, 75%-91%; $P < .001$), and ACE inhibitor or angiotensin II receptor blockers from 39% (95% CI, 26%-52%) to 69% (95% CI, 58%-70%; $P < .001$). The estimated in-hospital, 30-day and 1-year mortality decreased from 12.5% (95% CI, 4.3%-20.6%) to 7.2% (95% CI, 1.7%-12.6%; $P < .001$); from 15.0% (95% CI, 6.2%-23.7%) to 8.6% (95% CI, 2.7%-14.5%; $P < .001$); and from 21.0% (95% CI, 11.0%-30.9%) to 13.3% (95% CI, 0.6%-20.4%; $P < .001$), respectively. After adjustment, there was still a consistent trend with lower standardized mortality over the years. The 12-year survival analyses showed that the decrease of mortality was sustained over time.

Conclusion. In a Swedish registry of patients with STEMI, between 1996 and 2007, there was an increase in the prevalence of evidence-based treatments. During this same time, there was a decrease in 30-day and 1-year mortality that was sustained during long-term follow-up.

Reporting of Conflicts of Interest in Meta-analyses of Trials of Pharmacological Treatments

Michelle Roseman, Katherine Milette, Lisa A. Bero, James C. Coyne, Joel Lexchin, Erick H. Turner, Brett D. Thombs

JAMA 2011;305:1008-1017

Context. Disclosure of conflicts of interest (COIs) from pharmaceutical industry study funding and author-industry financial relationships is sometimes recommended for randomized controlled trials (RCTs) published in biomedical journals. Authors of meta-analyses, however, are not required to report COIs disclosed in original reports of included RCTs.

Objective. To investigate whether meta-analyses of pharmacological treatments published in high-impact biomedical journals report COIs disclosed in included RCTs.

Data Sources and Study Selection. We selected the 3 most recent meta-analyses of patented pharmacological treatments published January 2009 through October 2009 in each general medicine journal with an impact factor of at least 10; in high-impact journals in each of the 5 specialty medicine areas with the greatest 2008 global therapeutic sales (oncology, cardiology, respiratory medicine, endocrinology, and gastroenterology); and in the Cochrane Database of Systematic Reviews.

Data Extraction. Two investigators independently extracted data on disclosed study funding, author-

industry financial ties, and author employment from each meta-analysis, from RCTs included in each meta-analysis, and on whether meta-analyses reported disclosed COIs of included RCTs.

Results. Of 29 meta-analyses reviewed, which included 509 RCTs, only 2 meta-analyses (7%) reported RCT funding sources; and 0 reported RCT author-industry ties or employment by the pharmaceutical industry. Of 318 meta-analyzed RCTs that reported funding sources, 219 (69%) were industry funded; and 91 of 132 (69%) that reported author financial disclosures had 1 or more authors with pharmaceutical industry financial ties. In 7 of the 29 meta-analyses reviewed, 100% of included RCTs had at least 1 form of disclosed COI (pharmaceutical industry funding, author-industry financial ties, or employment), yet only 1 of these 7 meta-analyses reported RCT funding sources, and 0 reported RCT author-industry ties or employment.

Conclusion. Among a group of meta-analyses of pharmacological treatments published in high-impact biomedical journals, information concerning primary study funding and author COIs for the included RCTs were only rarely reported.