

KIDNEY FUNCTION AND THE RISK OF COMMUNITY ACQUIRED INFECTIONS

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OBJECTIVES

Community acquired infections (CAIs) are common, contributing to adverse outcomes and increased healthcare costs. We hypothesized that, with lower eGFR, the incidence of CAIs increases, while the pattern of specific CAIs varies.

METHODS

Among 1,139,470 healthcare users (mean age 52±18 years, 53% women) from the Stockholm Creatinine Measurements (SCREAM) project, we quantified the associations of eGFR with the risk of CAIs, overall and major types, over 12 months.

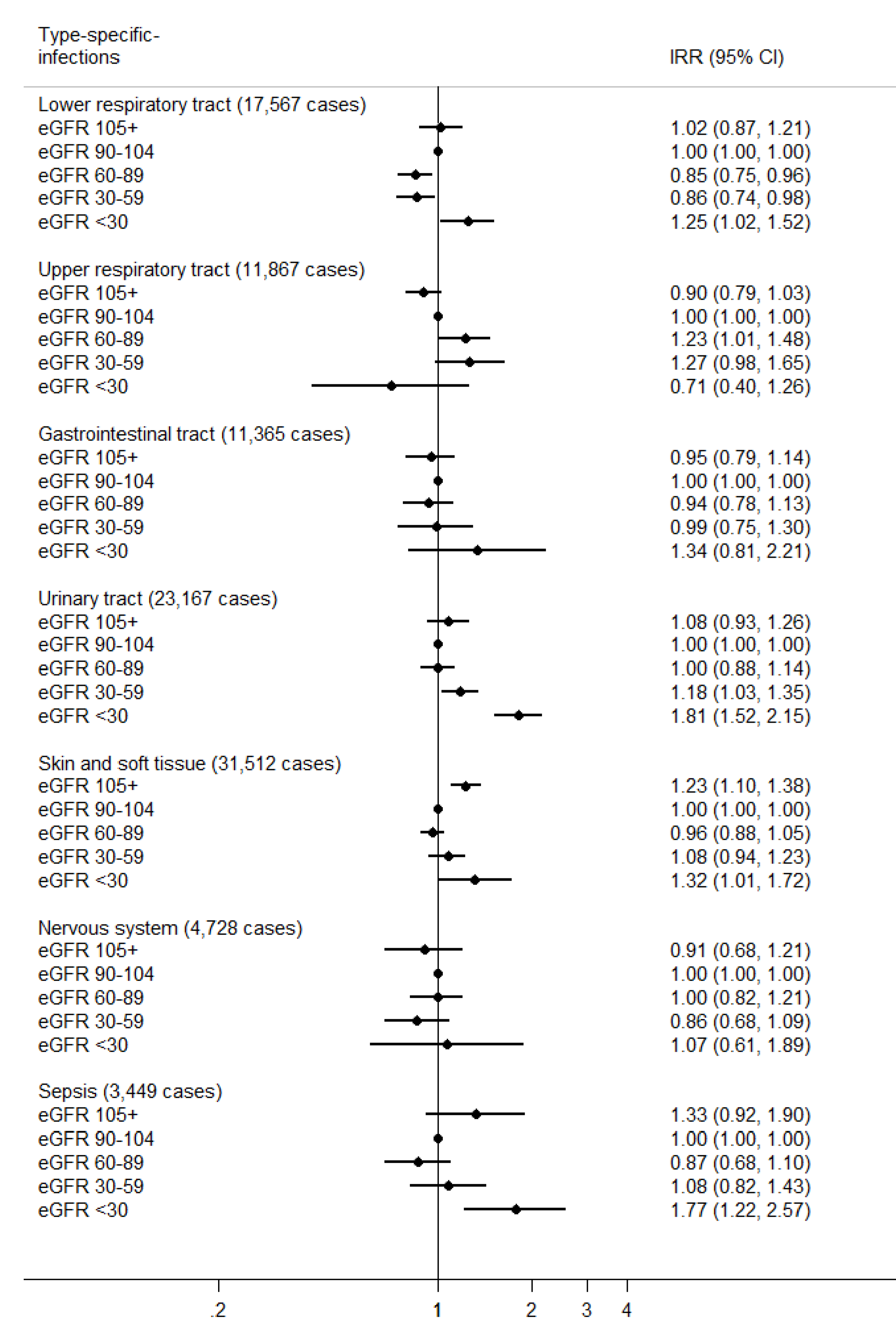


Figure 2: Incidence rate ratio for type-specific Community-Acquired-Infections across eGFR strata (ml/min/1.73 m2) within 12 months of follow up. Incidence rates were adjusted for age, sex, use of immunosuppressive drugs, prior anti-infection drugs (antibiotics, antimycotics and antivirals), comorbidities (cardiovascular disease, dementia, chronic pulmonary disease, rheumatic disease, peptic ulcer disease, liver disease, hemiplegia/paraplegia, cancer, diabetes, and hypertension) as well as exposure me.

RESULTS

A total of 106,807 counts of CAIs were recorded throughout 1,128,313 person-years. The incidence rate of all infections increased with lower eGFR, already at eGFR <60 ml/min/1.73 m2, but the relative proportion of lower respiratory tract infection, urinary tract infection and sepsis became increasingly higher along with lower eGFR strata (e.g., low-respiratory tract infection accounting for 25% vs. 15% of CAIs in eGFR <30 vs. 90-104 ml/min/1.73m2, respectively). Compared to eGFR of 60-104 ml/min/1.73m2, the adjusted incidence rate ratio (IRR) of CAIs was 1.08 (95% CI 1.01-1.14) for eGFR of 30-59 ml/min/1.73m2 and 1.53 (1.39-1.69) for eGFR<30 ml/min/1.73m2. The increased IRR across eGFR categories was in general consistent for most infection types, except for nervous system and upper respiratory tract infections where no association was observed.

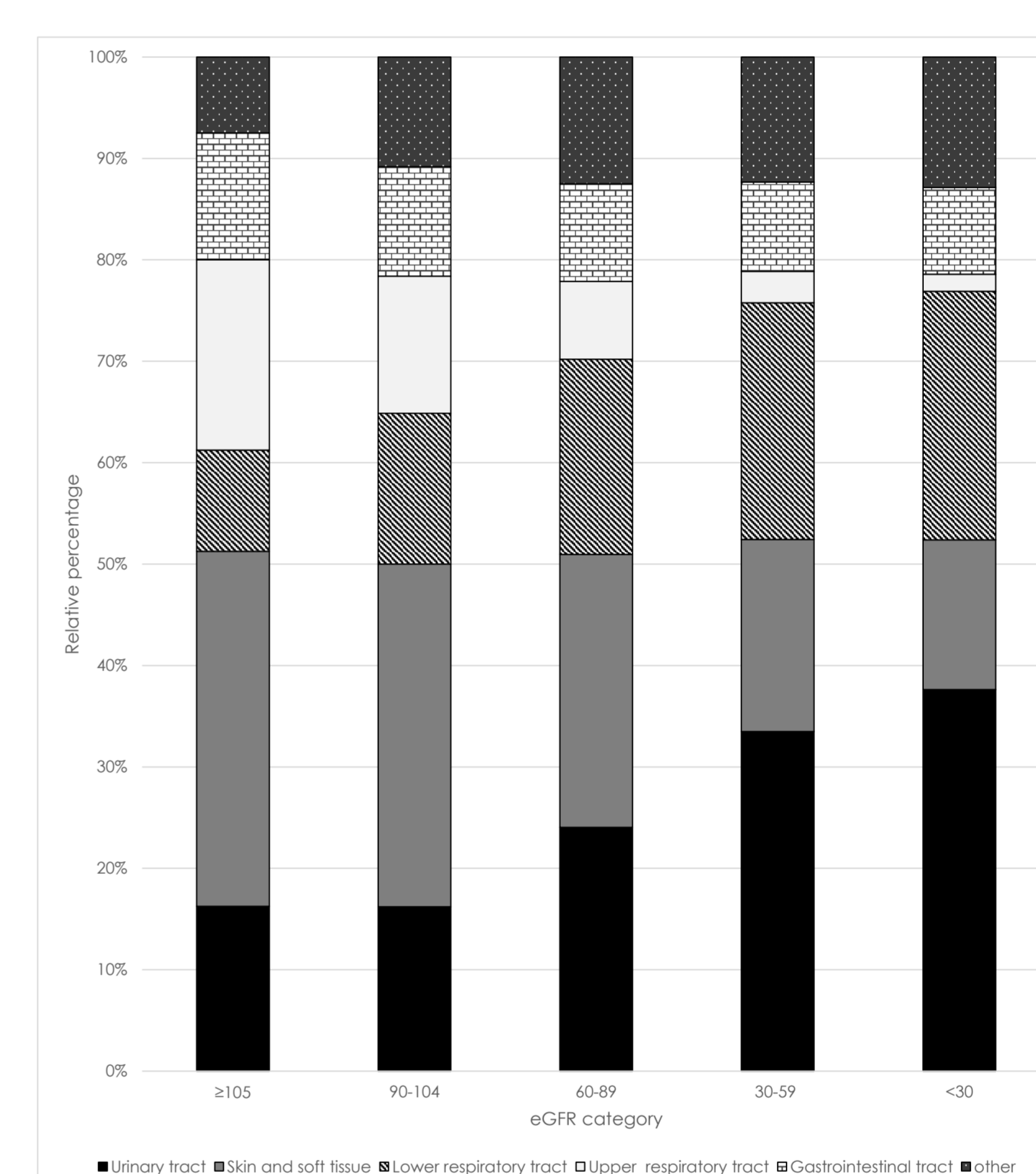
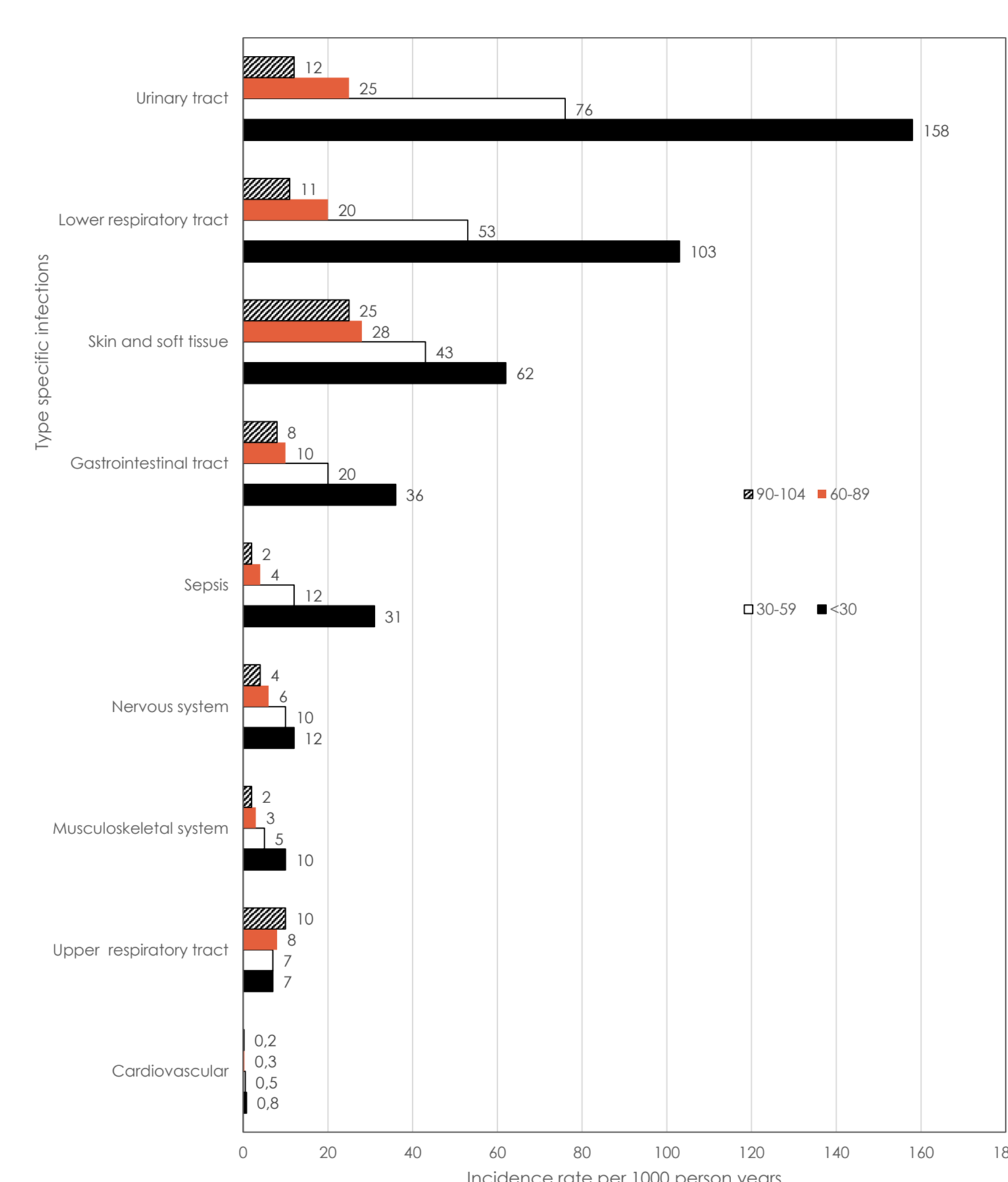


Figure 1: Incidence rate of type-specific infections by eGFR (ml/min/1.73 m2) categories within 12 months of follow-up and the five most common infection types (those with an incidence rate ≥ 10/1,000 person years) and the remaining minority types grouped under the category "others".

CONCLUSIONS

This region-representative healthcare study finds an excess CAIs incidence in individuals with mild to severe CKD. Lower respiratory tract infection, urinary tract infection, and sepsis are major CAIs in CKD. Increasing patient and provider awareness of this differential pattern of risk could have benefits for management, prevention, and health service planning.