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ANY INFECTION IS A RISK FACTOR FOR FUTURE CARDIOVASCULAR EVENTS IN CHRONIC KIDNEY DISEASE

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INTRODUCTION AND AIMS: Chronic Kidney Disease (CKD) affects 10% of adults and is associated with increased morbidity and mortality. Infection (Infct) has been described in CKD populations as impacting hospitalizations, morbidity and mortality. Inflammation and infection has been linked to cardiovascular disease. We hypothesized that infections in CKD patients may be linked to developing CV events (CVE) in CKD patients.

METHODS: CanPREDDICT is an observational pan-Canadian cohort of prospectively followed up CKD patients with eGFR 15-45ml/min/1.73m2; followed q6 monthly for 3 years then annually for 2 additional years. Infct were defined by use of antibiotics, categorized by anatomical location and counted for each six monthly interval. Outcomes of interest were any CVE. SPSS used for analysis and time to CVE used in a time-dependent covariate analysis

RESULTS: 2294 of 2544 patients had sufficient data for inclusion in the analysis (median follow up 2.86 years). Median age was 70.4 years, males (62.4%) and Caucasians (88.9%). A CVE occurred in 281 patients (12.1%); predominately ischemic (7.2%), then CHF (5.6%) and other CVE (1.0%). There were 187 deaths (8.2%), 1.6% were CV deaths. Patients developing a CVE were older (74.1 vs 69.7 years, p= 0.001) were more likely to have a background of diabetes (62.3% vs 45.2%, p< 0.001), CV Disease (68.0% vs 40.2%, p< 0.001) and a lower baseline eGFR (25.8,vs 27.7 ml/min/1.73m2 p= 0.008) and lower hemoglobin (120 vs 123 g/l, p<0.001). An Infct occurred in 480 patients (20.9%). Patients with an infection were more likely to develop a CVE (28.5% vs 19.9%, p= 0.001). The hazard ratio for CVE following an Infct is 2.90 (95% confidence interval 2.22- 3.78, p< 0.001). We stratified patients into 4 groups by history of previous CV disease and developing Infct. Using patients with no CV disease prior to enrollment and who did not develop an Infct as the reference group we determined that Infct exposure carries similar risk for future CVE compared to patients with a previous history of CV disease [FIGURE]. The highest risk remains in those with a background of CV disease who subsequently developed an Infct. Multivariate analysis taking into account other risk factors for CV events confirms Infct is an independent risk factor for cardiovascular events in CKD (p< 0.001).

CONCLUSIONS: Infct is a risk factor for developing CVE in CKD patients. The risk appears similar in magnitude to having a previous CVE. Results need to be confirmed in other studies and open up new possibilities for CV risk reduction in CKD patients.

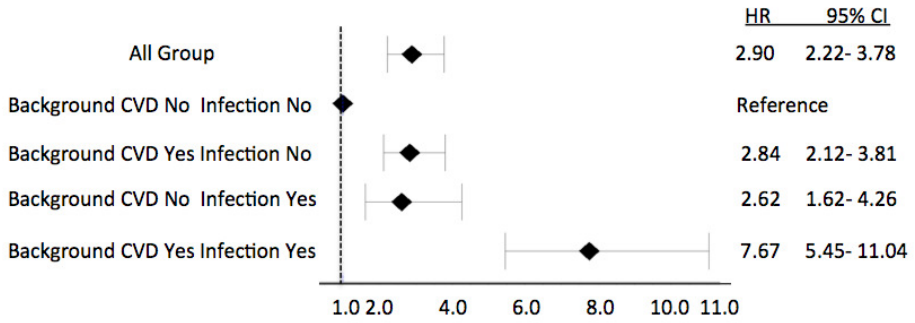

FIGURE: Hazard Ratio (HR) and 95% Confidence Intervals for cardiovascular event from infection exposure for all the study group and stratified by background of cardiovascular disease (CVD) and subsequent infection.
p< 0.001 in all groups