

## Aetiological subtypes of TIA and ischaemic stroke in chronic kidney disease: population-based study

Dr. Dearbhla Kelly<sup>1</sup>, Professor Peter Rothwell<sup>1</sup>

<sup>1</sup>*Wolfson Centre For The Prevention Of Stroke and Dementia, Nuffield Department of Clinical Neurosciences, University Of Oxford, Oxford, United Kingdom*

### Background And Aims

Chronic kidney disease (CKD) is strongly associated with stroke risk. The mechanisms underlying this association might be subtype-specific, but few studies have reported stroke subtypes in CKD according to established classification systems such as the Trial of ORG 10172 in Acute Stroke Treatment (TOAST) criteria. We aimed to determine which transient ischaemic attack (TIA)/ischaemic stroke TOAST subtypes occur most frequently in CKD.

### Methods

In a population-based study (Oxford Vascular Study), all ischaemic TIA/stroke were classified by TOAST subtypes (cardioembolism, large artery, small vessel disease [SVD], undetermined, multiple, other aetiology, or incompletely investigated). Logistic regression was used to determine the relationship between CKD (eGFR<60ml/min/1.73m<sup>2</sup>) and TIA/stroke subtype.

### Results

Of 2969 patients with TIA/ischaemic stroke, 1197 (40.3%) had CKD. Although there was a greater prevalence of cardioembolic (31.8 vs 21.2%;  $p<0.001$ ) and multiple aetiology (4.3 vs 2.8%;  $p=0.03$ ) events in CKD, these associations diminished after adjustment for age and hypertension (OR=1.21, 1.00-1.46;  $p=0.06$  and 1.09, 0.70-1.67;  $p=0.71$  for cardioembolic and multiple subtypes, respectively). There was lower prevalence of SVD (8.8 vs 13.6%), undetermined (26.1 vs 39.4%), and other aetiology (1.0 vs 3.6%) subtypes in CKD (all  $p<0.001$ ) but these associations were also not significant after adjustment (OR=0.84, 0.64-1.10;  $p=0.21$  for SVD, OR=0.84, 0.70-1.01;  $p=0.06$  for undetermined, OR=0.73, 0.37-1.45;  $p=0.36$  for other).

### Conclusions

There were few associations between CKD and specific TOAST subtypes after adjustment for age and hypertension, indicating that non-traditional or renal-specific risk factors are unlikely to be important causative factors in the relationship between CKD and stroke.