Additional data for renal analysis HSE 2009 and 2010

Additional analysis was carried out on blood samples for participants who were interviewed and had a nurse visit and blood sample in 2009 and 2010, to provide results for Serum cystatin C.

The cystatin C results have been matched on to the main data set for 2009 or 2010 using 'pserial'. The note below gives information about the variables, and others related to renal analysis that users may find helpful.

What are these data?

These data consist of renal analytes (both blood and urine) and some other derived variables for the 2009 and 2010 Health Surveys for England. These were used to investigate the prevalence of chronic kidney disease (CKD) based on single estimated glomerular filtration measures (eGFR) derived from serum creatinine (by two equations), cystatin C (by Grubb equation) and by albumin to creatinine ratio (uACR)
The details of the variables and their categorisation is as follows:

Renal analytes: serum creatinine, serum cystatin C, and eGFR rate as continuous variables and categorised into:

Serum creatinine:

- eGFR from CKDEPI equation in two categories: stage 3-5 CKD (eGFR<60/ml/min/1.73m^2), stage 1-2 CKD (eGFR≥60ml/min/1.73m^2)

- eGFR from MDRD equation in two categories: stage 3-5 CKD (eGFR<60/ml/min/1.73m^2), stage 1-2 CKD (eGFR≥60ml/min/1.73m^2)

Serum cystatin C:

- Grubb equation in two categories: Has stage 3-5 CKD (eGFR<60/ml/min/1.73m2), has stage 1-2 CKD (eGFR≥60ml/min/1.73m2)

uACR:

- Albuminuria into two categories: No (If uACR <3mg/mmol), Yes (If uACR ≥3mg/mmol)

Other variables:

- BMI (Body Mass Index) in three categories: Normal (<25kg/m2), Overweight (25-30kg/m2), Obese (30kg/m2+)

- Waist Circumference in three categories: Normal (<94cm if male, <80cm if female), High (94-102cm if male, 80-88cm if female), Very High (102cm+ if male, 88cm+ if female)

- Total Cholesterol into two categories: Below threshold (<5mmol/L), Above Threshold (≥5mmol/L) -Survey defined diabetes into two categories: No (HBA1c <6.5%), Yes (HBA1c ≥6.5%)

- Total diabetes into two categories: No (if No Dr diagnosed diabetes and HBA1c <6.5%), Yes (If Yes Dr diagnosed diabetes or HBA1c ≥6.5%)

- -Survey defined hypertension: into two categories: No (BP systolic <140mmHg and diastolic <90mmHg and not taking medication for hypertension) Yes (If BP systolic ≥140mmHg and/or diastolic ≥90mmHg and/or taking medication for hypertension)

- Total hypertension into two categories: No (If No Dr diagnosed hypertension and BP systolic <140mmHg and diastolic <90mmHg and not taking medication for hypertension), Yes (If Yes Dr diagnosed hypertension and/or BP systolic ≥140mmHg and/or diastolic ≥90mmHg and/or taking medication for hypertension)

How have the data been created (including derived variables)?

Renal analytes: creatinine, cystatin C, eGFR and uACR

- CKDEPI equation: Grouping the CKDEPI variable into the categories described above
- MDRD equation: Grouping the MDRD variable into the categories described above
- Grubb equation: Grouping the Grubb variable into the categories described above
- Albuminuria: Grouping the albcregp variable into the categories described above.

Others:

- BMI: Grouping the bmival variable into the categories described above

- Waist Circumference: Grouping the wstval variable into the categories described above

- Total Cholesterol: Grouping the cholval variable into the categories described above

- Survey defined diabetes: Grouping the hdlval variable into the categories described above

- Total defined diabetes: Grouping the Dr diagnosed diabetes (everdi) and Survey defined diabetes variables into the categories described above

- Survey defined hypertension: Grouping the diastolic blood pressure (omdiaval), systolic blood pressure (omsysval) and taking medication for blood pressure (bpmedc) variables into the categories described above

- Total defined hypertension: Grouping the Dr diagnosed hypertension (everbp) and Survey defined hypertension variables into the categories described above

How have the data been analysed?

- As sociodemographic and clinical characteristics of the weighted study sample (all variables)

- As Sociodemographic and clinical characteristics of people with CKD 3 – 5 defined by eGFR (from MDRD and CKDEPI equations) and after targeted addition of cystatin C (for total diabetes, total hypertension and albuminuria variables)

- As Characteristics of populations with selected combinations of biomarkers following testing with cystatin C (for total diabetes, total hypertension and BMI variables)

- Used in a regression model to look at associations of cystatin C CKD 3-5 (Grubb-defined eGFR <60ml/min/1.73m2) with socio-economic and clinical factors (for BMI and Albuminuria variables)