The MOSAICC Study - Methodology


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**Introduction**

- The myeloproliferative neoplasms (MPNs) are a rare heterogeneous group of diseases.
- Characterised by an overproduction of both mature and immature blood cells of the myeloid lineage.
- The JAK2V617F mutation is central to all three disease entities.
- Newly discovered CALR mutation accounts for JAK2 / MPL negative MPN genetic profiles.
- The aetiology of these disease entities remains unknown.
- A systematic review conducted by Anderson et al. 2011. identified ethnic, occupational, medical and environmental risk factors.
- The paucity of data investigating MPN aetiology warranted the need for an exploratory case-control study.

**Study Aim**

- Evaluating:
  - Recruitment and response rates by randomisation of;
    - Monetary incentive
    - MPD Voice Trolley token
    - MOSAICC branded pen / plain pen / no
  - Administering a telephone questionnaire using Skype and Qualtrics software.
  - Assessment of occupational exposure using OccIDEAs and comparing this to FINJEM software.
  - Collection of saliva, blood spots and venous blood samples for DNA extraction and quantification and toe-nail samples for elemental analysis.
  - Utilising the myeloproliferative neoplasm symptom assessment form (MPN-SAF) to assess quality of life.
  - Methodological aspects to develop and optimise protocol for a future, multi-centred, UK-wide study investigating the aetiology of MPNs.

**OccIDEAs**

- A web-based application using expert exposure methods to assign exposure status by predefined algorithms for specific occupations.
- Agents which can be assessed using OccIDEAs software;
  - Adhesives (solvent glues, contact adhesives)
  - Blood borne pathogens
  - Combustion products (diesel exhaust, petrol exhaust, other exhausts, other PAHs)
  - Fertilizers (mineral, natural)
  - Formaldehyde
  - Inorganic dusts (asbestos, fibreglass, silica, other inorganic fibres/dusts)
  - Metals (lead, other toxic metals)
  - Nitrosamines
  - Oils (natural, mineral, synthetic)
  - Organic dusts (wood, grain, cotton, other organic dusts)
  - Polychlorinated biphenyl (PCBs)
  - Pesticides (organochlorines, organophosphates, phenoxy herbicides, other herbicides, other pesticides)
  - Pigments (paints, dyes, other pigments)
  - Radiation (ionizing radiation, UV, ELF, RF)
  - Resins (acrylamide, resins)
  - Shift work, jetlag
  - Solvents (benzene, other aromatic solvents, chlorinated solvents, aliphatic solvents, alcohol)
  - Sterilizing agents (ethylene oxide, other sterilizing agents)

**MOSAICC Study Recruitment to date**

- 189 participants recruited;
  - 89 Cases
  - 39 GP Controls
  - 61 Friend/Family Controls

**UK WIDE STUDY PLANNED FOR 2014/15**