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Ethnicity and seasonality in a national 2 year study of Kawasaki Disease

Tulloh R.(1), Brown K.(1), Brogan P.(2), Harnden A.(3), Mayon-White R.(3), Ramanan A.(1), Tizard J.(1), Gargh K.(1), Michie C.(4), Lynn R.(5), Levin M.(6), Shingadia D.(2), Franklin O.(7), Davidson S.(8)
Bristol Royal Hospital for Children, Bristol, UK (1); Great Ormond Street Hospital for Children, London, UK (2); University of Oxford, Oxford, UK (3); Ealing General Hospital, London, UK (4); Royal College of Paediatrics, London, UK (5); Imperial College, London, UK (6); Our Lady's Children's Hospital, Dublin, Ireland (7); Kawasaki Disease Support Group, Coventry, UK (8)

Background Kawasaki disease (KD) is the commonest cause of paediatric acquired heart disease in the Western world. The incidence is doubling every 15 years. The risk in ethnic groups is unclear and each country has seasons with varying incidence. We wished to understand risk factors in our population and to determine our current incidence and rate of complications.
Methods We undertook a national survey of cases of Kawasaki disease from January 2013 to February 2015 via the British Paediatric Surveillance Unit. The survey was sent to all paediatricians and paediatric cardiologists in the UK and Ireland. It included questions on demographics, ethnicity, and seasonal of incidence in addition to treatment and complications of Kawasaki disease especially cardiac disease.
Results 600 notifications of KD were received. Of these 552 were cases of complete (n=388), atypical (n=46) and incomplete (n=116) with 2 deaths. There were 38 duplicates and 10 were excluded with alternative diagnoses. There were 215 girls, 322 boys (1:1.5), 15 with gender unreported with no difference in the sex ratio between complete, atypical and incomplete forms. The peak incidence was in January of all 3 years, with lowest incidence September to November. Age at diagnosis ranged from 2.5 months to 15 years (30% after 5 years). Whilst the majority of cases were Caucasian (67.6%), Chinese and Japanese Asians were over represented compared to the normal incidence in the population (3.8% v 0.8%). In addition we found that there were more Black African children with KD than expected from the healthy population (7.2% v 2.3%). 94.5% received intravenous immunoglobulin but despite this, 28% had coronary artery dilation or pericardial/myocardial involvement. Subgroup analysis showed that certain ethnic groups are at increased risk of specific complications.
Conclusions In this large population based study; we showed a high incidence in children of black African origin and of coronary artery involvement despite treatment. Any under-recognition of this disease and education of parents and clinicians should follow in order to minimise the future health burden of Kawasaki disease.