Abstract

Background: Genetic variation may partly explain heterogeneity in response to asthma treatment. Recently, the Pharmacogenomics in Childhood Asthma (PiCA) consortium was initiated to perform large-scale pharmacogenomics studies.

Aims: To describe the characteristics of the asthmatic children currently included in PiCA and to assess treatment response definitions within this growing consortium.

Methods: An online survey including questions about data collection, patient characteristics and outcome phenotypes was send to the 20 studies included in the PiCA consortium.

Results: In total, 14,634 children/young adults (up to 25 years) from 11 different countries are enrolled in the PiCA consortium. Preliminary analysis of patients showed that 60% of the patients are male. PiCA is ethnically diverse: 47% Caucasians, 25% Latinos, 14% Asians, 9% African-Americans, 2% have mixed/other-ethnicity and 3% is unknown. PiCA currently includes data of 2,056 severe asthmatics. Furthermore, PiCA has data of 8,907 short acting β2-adrenergic agonist (SABA) users, 7,908 ICS users, 2,054 leukotriene modifier (LTM) users and 1,543 users of long acting β2-adrenergic agonists (LABA). Ninety-five percent of the studies have information regarding asthma exacerbations and lung function measurements and 80% have data on asthma symptoms.

Discussion: The children within the PiCA consortium are a reflection of the global heterogeneous pediatric asthma population. Different outcome measures reflect different dimensions of asthma. By classifying three commonly used outcome measures using data that are available within the PiCA consortium, we will be able to study distinct response phenotypes in relation to genetics and clinical factors.