A GABRIEL Consortium Large-Scale Genome-Wide Association Study of Asthma

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Research Areas

- Biomarker Research
  - Diagnostic, Genomic Biomarker
- Basic Research

At a Glance

- Status: Completed Consortium
- Year Launched: 2006
- Initiating Organization: Wellcome Trust
- Initiator Type: Third-party organization
- Location: Europe

Abstract

The European GABRIEL Consortium in conjunction with partners from many other countries undertook the largest study to date in the genetics of asthma. This was a genome-wide association study by genotyping 10,365 persons with physician-diagnosed asthma, as well as 16,110 unaffected persons obtained from 23 individual studies. Random-effects pooled analysis was applied to test for association in all subjects and in subgroups of childhood-onset (present below the age of 16 years), adult-onset, severe, and occupational asthma.

Mission

European cases and population-matched controls were obtained from clinics and cohort and cross-sectional population surveys, including some family-based studies, cases, and controls from the first-generation, genome-wide association study, and cases and controls of European descent from Canadian, Australian, and U.S. surveys. Asthma was considered present if diagnosed by a physician. Childhood-onset asthma was defined as being present below the age of 16 years and adult-onset asthma to have started at 16 years or older. Some surveys contributed samples to both age-of-onset groups. Other subgroups consisted of cases of unknown age of onset, cases with occupational
asthma, or cases of severe asthma. All participants or their parents provided signed informed consent to participate in the study, according to the rules of local ethics committee. After quality control and filtering, genotype on 582,892 single nucleotide polymorphism (SNPs) on 10,365 cases and 16,110 controls from 23 different studies were retained.

Financing

This work was supported by the European Commission as part of GABRIEL (A multidisciplinary study to identify the genetic and environmental causes of asthma in the European Community) contract number 018996 under the Integrated Program LSH-2004-1.2.5-1. The study was also funded by the Wellcome Trust under WT084703MA: “A second-generation genome-wide association study for asthma,” Asthma UK (the Asthma UK genetics of severe asthma study (AUGOSA)) and the Ministère de l’Enseignement supérieur et de la Recherche (CEPH and CNG).

Data Sharing

The results file, available on the consortia website, contains the statistics divided by age-category and study in addition to pooled results for all the markers retained in the analysis after quality control.

Impact/Accomplishment


Links/Social Media Feed

Homepage  http://www.cng.fr/gabriel/index.html

Sponsors & Partners
Aalborg Hospital
Abt. Fuer Kinderheilkunde Foschungsinstitut zur Praevention von Allergien und
Atemwegserkrankungen im Kindesalter
Academic Unit of Respiratory Medicine
Aristotle University of Thessaloniki
AstraZeneca
Astrid Lindgren Children’s Hospital
AUGOSA Study Investigator
Avon Longitudinal Study of Parents and Children (ALSPAC) Investigator
BAMSE Study Investigator
Beatrix Children’s Hospital
Birmingham Heartlands Hospital and University of Birmingham
British 1958 Birth Cohort (B58C) Investigator
Canadian Childhood Cohorts: Canadian Asthma Primary Prevention Study (CAPPS) & Study of
Asthma Genes and Environment (SAGE) Investigator
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Clinic for Paediatric Pneumology and Neonatology, Hannover Medical School
Epidemiological study on the Genetics and Environment of Asthma (EGEA) Investigator
Erasmus University Medical Centre
European Community Respiratory Health Survey (ECRHS) Investigator
Fondation Jean Dausset-CEPH
GABRIEL Advanced Surveys (GABRIEL AS) Investigator
Galdakao Hospital
Genetics of Asthma International Network (GAIN) Investigator
German Research Centre for Environmental Health (GmbH)
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KARELIA Allergy Study (KARELIA) Investigator  
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KSMU Study Investigator  
Kursk State Medical University  
Max-Delbrück-Centrum (MDC) for Molecular Medicine  
Member of the GABRIEL Consortium  
Municipal Institute of Medical Research (IMIM-Hospital del Mar)  
National Heart and Lung Institute, Imperial College, London  
National Institute for Health and Welfare, Helsinki  
National Institute for Public Health and the Environment  
National School of Public Health, Athens  
Nottingham Respiratory Biomedical Research Unit  
Ontario Institute for Cancer Research  
Oslo University Hospital and Faculty of Medicine  
PathWest Laboratory Medicine  
PIAMA Study Investigator  
Queen’s University of Belfast  
Radboud University Nijmegen Medical Centre  
Research Institute of Medical Genetics of the Siberian Branch of Russian Academy of Medical Sciences  
Royal Brompton Hospital  
Sachs Children’s Hospital  
Saguenay-Lac-Saint-Jean (SLSJ) Familial Collection Investigator  
Sanquin Research, Department of Immunopathology, Amsterdam  
SEVERE ASTHMA COHORTS Investigator  
Siberian State Medical University  
Sir Charles Gairdner Hospital  
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Updated: 04/14/2016