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

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...
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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
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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
Centre for Research in Environmental Epidemiology (CREAL)
Centre Hospitalier Universitaire
Charité Universitätsmedizin Berlin
CIBER Epidemiologia y Salud Pública (CIBERESP)
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)
GlaxoSmithKline R & D
Haukeland University Hospital
Helmholtz Zentrum
Helmholtz Zentrum Munich Institute of Epidemiology
Helsinki University Central Hospital
Hospital General de Asturias
Hospital General Universitario de Albacete
Hospital Juan Ramón Jiménez
Imperial College
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Inserm
Institut de Génomique
Institute of Social and Preventive Medicine
KARELIA Allergy Study (KARELIA) Investigator
Karolinska Institutet
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
St George’s University of London
Swiss study on Air Pollution and Lung Disease In Adults (SAPALDIA) Investigator
Swiss Tropical and Public Health Institute
Tartu University Hospital
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