

UNVEILING THE GENETIC OVERLAP AND CAUSAL LINKS BETWEEN GASTROESOPHAGEAL REFLUX DISEASE AND ASTHMA

Hao Chen

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Poster

Oesophagus

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Genome-wide analysis identifies 56 shared genetic risk loci between GERD and asthma, including 51 newly discovered loci, and reveals a significant causal effect of GERD on asthma.

KEY POINTS

- A significant genetic correlation was found between GERD and asthma ($r_g = 0.37$, $P = 6.19 \times 10^{-38}$), with mendelian randomization demonstrating a causal effect of GERD on asthma ($OR = 1.22$, $P = 1.54 \times 10^{-5}$).
- Cross-trait meta-analysis of GWAS data from 71,522 GERD cases and 56,167 asthma cases identified 56 shared genetic risk loci, of which 51 were newly identified.
- Three loci (rs61937247, rs7960225, and rs769670) showed colocalization evidence, and three novel shared genes were identified: RBM6, SUOX, and MPHOSPH9.
- Single-cell RNA sequencing revealed heightened expression of these shared genes in immune cells of GERD patients.
- This work is relevant to researchers investigating the genetic basis of GERD-asthma comorbidity and potential shared disease mechanisms.

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