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CLARIFYING 'COMPLEX' INHERITANCE; LEADS TO NEW THERAPIES FOR ATHEROSCLEROSIS

Dr. A Garrod (1857-1936), a physician at St. Bartholmew's Hospital, discovered a group of diseases which he called the Inborn Errors of Metabolism; examples include phenylketonuria, familial hypercholesterolaemia, cystic fibrosis etc. There are now more than 8,000 documented in clinical practice but are usually rare. He also showed they were inherited in humans according to the Laws discovered by Gregor Mendel (1822-1884); that is by dominant or recessive inheritance with ratios of 3:1 for the two different traits in progeny of first cousin marriages. However his ideas did not apply to the inheritance of common metabolic disorders such as diabetes, gout or atherosclerosis which have an inherited basis but occur much more commonly than the inborn errors. He thought that there must be alternative modes of inheritance to Mendel's binomial concept which he called the liability (or susceptibility) to inherit these common diseases.

My talk will describe how these susceptibilty genes were discovered, where they are located, what is their function, and why they are found so widespread throughout the genome. I will end with some clinical uses these susceptibility genes have provided.

Biography

David J Galton is Emeritus Professor at London University from the Departments of Molecular Genetics and Metabolism, St. Bartholomew's Hospital. He gained doctorates in Medicine (M.D. at the National Institutes of Health, USA) and in Science (D.Sc). Eight students from his Laboratory have become Professors. He has been Chairman of Clinical Science, Secretary of the European Atherosclerosis Society, and Vice-President of the Galton Institute London, amongst other administrative posts. He has published 8 books and written more than 250 research publications on genetics of human disease. He has served as consultant physician to St. Bartholomew's Hospital and Moorfield's Eye Hospital London.

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