

PRESS RELEASE
WINNERS ANNOUNCED
1988/1408H KING FAISAL INTERNATIONAL PRIZE
IN
MEDICINE

Topic: LEUKAEMIA

The King Faisal International Prize in Medicine was awarded for work on leukaemia. This group of blood cell disorders is a major cause of death in children and adults. They account for 25% of all cancers in children and 10% in adults. The leukaemias are worldwide, affecting all races and ages. They pose a special problem in developing countries where the health services cannot afford or do not have the facilities required for the prolonged and specialized treatment that is needed.

The research carried out for more than 20 years by two investigators has been outstanding in throwing light on the nature and origin of the different types of leukaemia, and on making possible their precise diagnosis and treatment. The Prize has therefore been divided equally between:

Professor Janet Davison Rowley
Professor Melvyn Francis Greaves.

Dr. Rowley, an American born in 1925, is the Blum-Riese Distinguished Service Professor in the Franklin McLean Memorial Research Institute of the University of Chicago. In 1973 Dr. Rowley demonstrated the nature of the Philadelphia chromosome which is now recognized as being an important genetic marker in most patients with adult-type chronic myelocytic leukaemia and some acute leukaemias. She also demonstrated that chromosomal translocations in certain types of leukaemia can be related to the morphological classification established by the French-American-British group (the internationally accepted FAB classification). Dr. Rowley showed that the translocations can be associated with the movement of regulatory genes known as oncogenes from their normal sites where their regulatory functions are lost, thus

predisposing to malignancy. In addition to her major contribution to the cytogenetic identification of most of the subtypes of lymphoid and myeloid leukemias, Dr. Rowley described the chromosomal abnormalities in an acute and refractory type of leukaemia that sometimes follows the treatment of other forms of cancer with radiotherapy or cytostatic drugs. Her other major contributions which have immediate practical applications include the mapping by molecular biological techniques of genes responsible for the production of interleukin 3 and macrophage colony stimulating factor on the human chromosome 5. She and her team have published over 220 scientific papers on the cytogenetics and molecular biology of leukaemic cells during the past 25 years. Dr. Rowley has been a member of the editorial boards of a number of the leading national and international journals in the field.

Dr. Greaves, a British national born in 1941, is the Director of the Leukaemia Research Fund Centre of the Institute of Cancer Research. Over a period spanning more than two decades he has made a number of seminal contributions to our understanding of the origins and causes of leukaemia. His pioneering work on the immuno-phenotyping of leukaemia cells has been of fundamental importance in the classification of this disease complex. This, in turn, has greatly aided the establishment of diagnosis and prognosis, and the design of treatment in individual cases. On the basis of his research on the identification of the origins of different cell types of leukaemia he has developed an hypothesis on the possible role of stem mutations in their causation. Dr. Greaves' work on cell phenotyping has opened the way to an international, collaborative investigation of the epidemiology of acute leukaemias. He is also involved in the establishment of a computer programme to facilitate diagnosis. In addition to this, Dr. Greaves has contributed significantly to the definition of the association between HTLV-I and human lymphoma/leukaemia in blacks in the United Kingdom, the only leukaemia so far identified as being of viral origin.