PIONEERS IN RHEUMATOLOGY

PS Hench

VR Joshi*, VB Poojary**

The discovery and synthesis of cortisone by Philip Showalter Hench, Edward C. Kendall, and Tadeusz Reichstein was an important milestone in the evolution of treatment of rheumatoid arthritis (RA). The trio was awarded the Nobel prize in Medicine or Physiology in the year 1950 for their "Discoveries relating to the hormones of the adrenal cortex, their structure and biologic effects". Incidentally this was the shortest time interval between a discovery and the award of Nobel prize.

Philip Showalter Hench

Hench was born on 28th February 1896 in Pittsburgh, PA, USA. Though well known for the development of cortisone, Hench was even otherwise regarded highly as a clinician, a teacher, and a medical historian.[1]

Hench graduated in arts in the year 1916 from Lafayette College in Pennsylvania. He joined US Army during World War I, and served in the Medical Corps. At the end of war he received medical training with United States Army Medical Corps and the University of Pittsburgh.[2] In 1920 he obtained doctorate in medicine, of Pittsburgh University, and then worked as an intern at St. Francis Hospital, Pittsburgh before joining the Mayo Clinic in 1923, as a Fellow of the Mayo Foundation in the department of Rheumatic diseases. This was a time when rheumatology was considered a soft underbelly of the Mayo clinic. Subsequently he was appointed to the positions of Instructor in 1928, Assistant Professor in 1932, Associate Professor in 1935, and Professor and head of rheumatic diseases in 1947 all at Mayo.[3] Between 1928 and 1929, he studied at Freiburg University and Von Müllers Clinic in Munich, Germany.[3] In 1942, during World War II Hench joined army as a Lieutenant-Colonel in Medical Corps and was the Chief of the Medical Service and Director of Army's Rheumatism Center at the Army and Navy General Hospital. In 1946, at the end of World War II, he left army with a rank of Colonel but continued as a consultant to the Army Surgeon General.[3]

Apart from the Nobel Prize, Hench was awarded Heberden Medal in 1948 (London), Lasker award in 1949, the Passano Foundation award and Criss Award in 1951. He received honorary doctorates of Lafayette College, Washington and Jefferson College, Western Reserve University, the National University of Ireland, University of Pittsburg, and the Master of Science from University of Minnesota.

He was a member of the American Medical Association, a fellow of American College of Physicians, founder member of the American Rheumatism Association (President 1940-1941), honorary member of the Royal Society of Medicine (London), and many national rheumatology societies.[2]

Hench was a keen historian. He was particularly interested in the famous experiments on yellow fever of US Army Yellow Fever Commission and became an expert on the subject[4]. Following his death, his collection of documents and letters related to yellow fever were

*Director, **Research Administrator, Research Department, P. D. Hinduja National Hospital and MRC, Veer Savarkar Marg, Mahim, Mumbai 400 016

donated to the University of Virginia the alma matter of Walter Reed. These documents are the most detailed and accurate records available on the conquest of yellow fever.[4]

Hench was a large man. He had an imposing personality. By sheer application he overcame severe cleft deformity to become an excellent orator, captivating the audiences.

Interestingly, he was a member of the Sherlock Holmes Society. His collection of Connan Doyle's early editions is kept in the University of Minnesota[1]. He wrote 'any truth is everybody's bussiness'.[1] Music, photography and tennis were his other interests.

Discovery of cortisone[1]

On April 1 1929, Hench observed improvement in the arthritis of a 65 year old doctor suffering from jaundice. Though the jaundice cleared in 4 weeks the improvement lasted for 7 months, much beyond the recovery from jaundice. Subsequently he collected 31 more such cases and noted that the effect was related to the depth of jaundice rather than to its cause. The same phenomenon happened temporarily in association with other conditions such as pregnancy, infection, and post-surgical state. There was similar improvement in allergic conditions also. Hench postulated that the effect was due to an innate substance (substance X) with an unknown production site. Administration of bile, bile salts, "jaundice blood" had no benefit. Focus on adrenal gland was most probably due to the fact that the post surgical state was associated with adrenal response and the fatigue seen in patients of rheumatoid arthritis was similar to that seen in patients with Addison's disease. He became associated with Kendall, Professor of Physiological Chemistry who was also working at the Mayo Clinic. Kendall was a prolific researcher. Amongst the many compounds isolated from adrenal gland by Kendall, compound E was considered the most likely substance as it preserved the life of adrenalectomised animals. Hench and Charles Slocumb, on 21 September 1948, injected 50 mg of compound E to Mrs. Gardner, a virtually wheel chair-bound 29 year old patient with severe erosive rheumatoid arthritis, followed by 100 mg daily. The effect was spectacular. On day 4, Mrs. Gardner was able to walk out of the hospital! Hench had delivered Heberden lecture a week later but made no mention of his success until he treated 15 more patients, 2 of them with ACTH. On 13th April 1949 Hench presented the results at the weekly night meetings of the scientific staff of the Mayo clinic. The presentation included videos before and after treatment. At the end of the presentation a packed audience gave him a standing ovation.

Hench and Kendall shared the prize money with their colleagues at Mayo. He sent sister Mary Pantaleon, supervisor of the arthritis wing, for an audience with the Pope, to full-fill her long-time desire.

Hench died on 30th March 1965, in Ocho Rios, Jamaica while on a vacation.

References

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