Editorial

The Nobel Prize and Endocrinology

Sanjay Kalra – Editor-in-chief


The Nobel Prize in Physiology or Medicine has been awarded 101 times to 196 Nobel laureates between 1901 and 2010. Instituted by Alfred Nobel in his will of 1895, the Nobel Prize in Medicine is to be given to “the person who shall have made the most important discovery within the domain of physiology or medicine.”

The prize has been withheld on nine occasions, the last three being 1940, 1941 and 1942. Thirty eight prizes have been won singly, while 31 have been shared by two laureates, and 32 by three scientists.

Ten of the 196 laureates are women of these four have won the prize in the post 6 years (2004 onwards).

Endocrinology is a relatively young branch. However, endocrine researchers and scientists have made an impressive showing at the Nobels. Fredrick G Banting, who won the 1923 prize at the age of 32, holds the record for the youngest recipient of the Medicine Prize. Rosalyn Yalow, who won the 1977 prize has the place of pride in the official website of the Nobel Prize Foundation, as her picture adorns the ‘facts on the Nobel Prize in Medicine’ page.

This editorial focuses on the stalwarts who have won the Nobel Prize in Medicine or Physiology, for their work in endocrinology.

Most recently, Robert G Edwards (UK) was the sole winner of the 2010 prize, for the development of in vitro fertilization (IVF). IVF is an important associated reproductive technology which has changed the countless couples across the world.

Prior to that, work on nitric oxide as a signaling molecule in the cardio vascular system won the 1998 prize for Robert F Furchgott, Louis J Ignarro and Ferid Murad (USA). Nitric oxide, and the endothelium, are now recognized to have endocrine effects.
In 1994 Americans **Alferd G Gillman** and **Martin Rodbell** took top honours for discovering G-proteins and their function. This is now the basis of much of the endocrine system.

Another basic metabolic discovery, regarding “reversible protein phosphorylation as a biological regulatory mechanism” brought the prize to **Edmond H Fischer** and **Edwin G Krebs** (USA) in 1993. In 1986, **Stanley Cohen** (USA) and **Rita Levi Montalcini** (Italy) were awarded the prize for discovering growth factors.

A year earlier, **Michael S Brown** and **Joseph L Goldstein** (USA) had picked up top honours for their work on cholesterol metabolism.

Prostaglandins were the prize-winning discovery in 1982, with the award being shared by **Sune K Bergstrom**, **Bengt I Samuelsson** (both Sweden) and **John R Vane** (UK).

An important year for endocrinology was 1977. **Roger Guillemin** and **Andrew V Schally** (USA) received half the prize for their work on peptide hormones of the brain.

**Rosalyn Yalow**, also from the USA, won the other half for the development of radioimmunoassay. This is one of the single most important discoveries which has had an impact on clinical endocrinology.

**Earl W Sutherland**, Jr (USA) in 1971 had walked away with the prize for his work on mechanism of action of hormones. In 1966, **Charles B Huggins** (USA) took half the prize amount for discovering hormonal treatment of prostatic cancer.

In 1964, **Konrad Bloch** (USA) and **Feodor Lynen** (Germany) working on cholesterol and fatty acid metabolism, shared the prize.

**Hans A Krebs** (UK) was honoured with Nobel Prize in 1953, for his discovery of the citric acid cycle, as was **Fritz A Lipmann** (USA), for his discovery of coenzyme A.

**Edward C Kendall**, **Tadeus Reichstein** and **Philip S. Hench** (USA) jointly took the 1950 prize for the discoveries related to adrenal cortical hormones.

In 1947, **Carl F Cori** and **Ms. Gerty T. Cori**, nee Radinitz (USA) took half the prize for their discovery of the catalytic conversion of glycogen. This is the only husband-wife team to have won a Nobel prize for work in endocrinology. The other half went to **Bernardo A Houssay** (Argentina) for his work on the role of the anterior pituitary in carbohydrate metabolism.

In 1923, **Frederick G Banting** and **John JR Macleod** (Canada) received the prize for the discovery of insulin. This discovery has saved the lives of countless millions of people with diabetes.

**Emil T Kocher** bagged the 1909 prize for his work on the physiology, pathology and surgery of the thyroid gland. This is the only Nobel awarded so far in thyroidology.

Thus, endocrinology has been a regular visitor at the Nobel high table in almost every decade. Work in all glands, from pituitary to pancreas to adrenals and gonads, has been acknowledged by the Nobel committee.
We pay tribute to the researchers of yesterday, because of whose discoveries, our science has grown to what it is today.

References