

Professor Gösta Arturson (1927–2013): Obituary

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Professor Gösta Arturson (1927-2013)

Gösta Arturson is dead, leaving his wife Margareta and four children with families behind.

Gösta Arturson carried out break-through research on the pathophysiology of the burn injury in the mid 20ties century, and the results were of significant importance in the development of burn care in Sweden, Scandinavia and Internationally.

Gösta Arturson was born in Western Sweden in 1927, between the two world wars. He left his home region for Uppsala to enter the Uppsala University Medical School, where he met his wife and partner in life, Magareta. After Medical school he commenced what was to be the basis for his successful scientific career, studies on the microvascular alterations in severe burn injury. His success was the result of a number of simultaneous events, in addition to his personal skill and creative mind.

First, Gösta found himself in the midst of an environment where the Uppsala based pharmaceutical company Pharmacia AB, had developed dextran into an effective plasma substitute. The ability to synthesize dextran fractions with well-defined molecular weights was a door opener for studies on the relation between molecular weight and passage across the linings of microvascular vessels. Already in the early 50-ies, the pediatric surgeon Gunnar Grotte, together with Jesse L Bollman at the division of experimental surgery of the Mayo Clinic, using a new technique for cannulation of lymphatics in the rat used dextran fractions to show that molecules penetrate capillary walls somehow in relation to their molecular size (1), and later exploited this further to define the functional ultrastructure of the capillary membrane (2).

Second, the specialty of plastic surgery had advanced quickly at the Uppsala University Hospital, which in Professor Tord Skoog had an extremely creative and laterally working chief of staff, who since 1960 also was the first Scandinavian professor in Plastic Surgery. Tord Skoog had seen to that the first Swedish ward explicitly devoted to care of severe burns was opened in 1951. He himself had considerable burn experience after training in Finland and Great Britain. Under his mental umbrella Gösta had the opportunity to access severe burns for studies.

Third, the political map with the Cold War at its height in the early 1960ies had resulted in considerable military investments in research on burns, a type of injury that was associated with the use of nuclear weapons.

In that climate Gösta carried through his PhD studies which was finalized in a thesis entitled "Pathophysiological Aspects of the Burn Syndrome with Special Reference to Liver Injury and Alterations of Capillary Permeability" (3). This attracted much international attention as the results for the first time explained the mechanisms of the rapid plasma loss that occurs after burns.

In the early 60ies plans arose for an International round-table conference on burns, with the aim to present current best available knowledge on burn care and on important topic for research. This was made possible by private donations from The US based Colonial Research Institute and took place in West End, Grand Bahama March 23-25, 1963. Gösta Arturson was one of 15 invited lecturers from several countries who were to cover all sectors of burn care. The proceedings from this meeting (4), is actually a fantastic reading experience for all who want to obtain a perspective of the last 50 years history of burn care. It pulls the legs of each and every one of us who at any time may have believed that ignorance was prevailing in the care of burns at that very time. One of the presentations that would stand up also today is that describing the results of Gösta Arturson's work.

After his dissertation his research skills were enhanced while a fellow at the Industrial Injuries and Burns Research Unit, Birmingham Accident Hospital, Birmingham, England in 1963. As an assiduous investigator and accomplished scholar the publications of his life's work show contributions of fundamental importance that have augmented our knowledge in the pathophysiology of the burn syndrome specifically in the areas of inflammatory mediators and immunology, inhalation injury, the affinity of hemoglobin for oxygen, energy expenditure, hypermetabolism, and nutrition, infection, , kidney and liver function and dysfunction, and not least microvascular permeability and fluid resuscitation.

Back in Sweden again, he was appointed associate professor and shortly thereafter full professor in Shock and Burn Care at the Swedish Medical Research Council, a position that was transferred to Uppsala University in 1982.

Through his scientific contributions, Gösta Arturson was an internationally highly respected name in burn care and received numerous awards, among others the G. Whitaker International Burns Prize from The Euro-Mediterranean Council for Burns and Fire Disasters in 1986, the A.B. Wallace Memorial Lecture from the British Burn Association in 1987, the Rudi Herman's lecture from the European Burns Association in 1997, and the Tanner-Vandeput-Boswick burn prize by the American Burns Association in 1997.

Gösta Arturson's participation on the Bahama International conference on Burns also had another consequence. At that time, a few months after the Cuba Missile Crisis, a global fear for a nuclear confrontation was obvious, and the consequences were also discussed in private among the participants. Through personal contacts he was involved in firsthand information about the superpower arms race and on the tough work of the Partial Test Ban Treaty. He afterwards commented that his political awakening about nuclear weapons was violent. This was the impetus for active participation in the medical anti-nuclear movement, and subsequently to the position of president of the Swedish branch of the International Physicians for the Prevention of Nuclear War (IPPNW) the years 1982-1986. A climax of this work was to be one of the representatives that received the Nobel Peace Prize in 1985 for the IPPNW. The contribution in this field gave Gösta much personal credit. From this work he did chose his own motto: *"It is not lack of intelligence, but emotional immaturity that is the problem of our time."*

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