

Commemorating Professor Renzo Galanello



On May 13, 2013, at 1:00 a.m., Dr. Renzo Galanello lost his battle with cancer, diagnosed only seven months earlier. The members of the International Biolron Society express their most heart-felt condolences to his family and friends. We grieve the loss of Renzo with his wife, Maria-Antonietta, his daughter, Giulia, and his sons Giacomo and Giovanni.

Dr. Galanello was the professor of pediatrics at the University of Cagliari and appointed as the director of the 2nd Pediatric Clinic, department of biomedical sciences and biotechnologies at the University of Cagliari, Ospedale Regionale per le Microcitemie, succeeding the renowned Professor Antonio Cao. Prof. Galanello was an accomplished scientist, a caring physician and a humble and sincere man. His integrity was known to all.

Born July 21, 1948 in Parrano (<http://parrano.org>), a municipality of about 1800 people, at the time*, in the Province of TERNI, in Umbria, Renzo rose to the ranks of an international statesman in science and medicine, with his greatest contributions being found in the fields of thalassemia and genetics. At the time of his passing, PubMed identified 230 publications that he authored or co-authored, 5 of these in 2013, and others are, no doubt, "in press." In addition, he authored several chapters in acclaimed textbooks in hematology and laboratory medicine, including, Wintrobe's Clinical Hematology. He was a reviewer for several medical and scientific journals and societies and an advisor to numerous patient organizations, particularly in thalassemia.

His academic career began in 1972, when Renzo graduated from the University of Perugia, with Honours, and was appointed as an assistant professor in clinical pediatrics at the University of Perugia, almost simultaneously with the completion of his specialization in pediatrics from the same institution. It was also at this time that Renzo obtained a contract position with the University of Cagliari in the department of biomedical sciences and biotechnology. While focused on clinical care during his specialization, his proclivity towards science began to emerge, with his first international publication targeted at screening techniques to detect thalassemia early on in pregnancy¹. Little did he know, at the time, his work would lead to an internationally acclaimed laboratory in the genetics of thalassemia and related hemoglobinopathies. Driven by a compassion for others, particularly children, he chose to pursue additional studies in pediatrics, with a diploma in child care from the University of Sassari in 1978.

* Current population estimated to be about 500 people

Having had an excellent education and training in pediatric medicine, and sound experience in laboratory research, Prof. Galanello decided to expand his area of expertise in medical genetics and chose to work with Dr. George Stamatoyannopoulos, a world-class geneticist in Seattle, Washington, where he was appointed as Senior Fellow in the Department of Genetics at the University of Washington from 1983 – 1985. At that time, he initiated ground-breaking exploration into the pharmacologic manipulation of genes to induce fetal hemoglobin, aimed at improving the well-being of patients with sickle cell disease^{2,3}.

In 1988, Dr. Galanello was promoted to associate professor of metabolic diseases of children at the University of Cagliari, rising to the rank of full professor of pediatrics in 2000.

His interest in genetic research was enabled by the population in Sardinia, with a relatively pure genetic pool of thalassemia patients^{4,5}. Whether conducting studies on genome wide associations^{6,7}, or revealing the connection between cholelithiasis and Gilbert's syndrome in homozygous beta thalassemia patients^{8,9}, or discovering new variants of thalassemia¹⁰, Renzo's basic understanding of genetics and his probing mind, led to novel discoveries and a deeper understanding of the disease to which he devoted much of his professional life.

Even early in his career, his research made a difference. By genetic testing of patients on the island of Sardinia, he was able to characterize the most common gene defects leading to thalassemia in the Island. He found that in the large majority of the cases (95.7%), beta-thalassemia is caused by the nonsense mutation at codon 39, followed by frame shifts at codon 6 (2.1%). Armed with that knowledge and utilizing screening methods for thalassemia, he introduced a formal preventive program in Sardinia, which was highly effective, and by 1991, a decline in the incidence of thalassemia major from 1:250 to 1:1,000 live births was reported¹¹.

By the mid 1990's Renzo had enlarged his scientific interest to include the study of iron chelators as a means of reducing morbidity and mortality in patients with thalassemia. As a principal investigator in pivotal trial of deferiprone in thalassemia, he enrolled the largest cohort of patients¹². His continued investigation into the safety and efficacy^{13,14} of deferiprone led to a sound and balanced understanding of the use of this iron chelator in patients with iron overload^{15,16,17}. His expertise in iron chelation was soon recognized by pharmaceutical companies that were planning to develop new iron chelators and they sought him out in Phase I and II studies to obtain early insight into their new compounds, including deferasirox^{18,19,20} and FBS0701²¹.

Dr. Galanello was one of the first in a group of visionaries in the field to recognize that new approaches to iron chelation, targeting cardiac iron, might have a profound impact on survival²². Soon thereafter, he collaborated with other leaders in the field to compare the efficacy of deferiprone to that of deferoxamine, the standard of care at the time, in reducing cardiac iron concentrations and improving cardiac function in thalassemia patients without clinical evidence of previous myocardial impairment²³.

He furthered the field by pioneering different approaches of combinations of deferiprone and deferoxamine to maximize cardiac protection, leading to decreased heart disease and increased survival in patients with thalassemia^{24,25,26,27,28}. He then went on to demonstrate the benefits of combined therapy in patients with severe myocardial siderosis and left ventricular dysfunction, providing a scientific rationale for new options for patients at imminent risk of a cardiovascular event²⁹. Within a decade of his pioneering this approach, he reported that combination iron chelation was associated with increasing survival in patients with thalassemia³⁰. Most recently,

he began to explore the potential of combining deferoxamine with deferasirox, as another potential approach to combining iron chelators in transfusional iron overload³¹.

The expertise he had gained in the field of iron chelation therapy, in patients with iron overload, helped investigators treating other conditions, as he collaborated to study the use of iron chelation in pantothenate kinase associated neurodegeneration, a rare neurodegenerative condition, in which iron is implicated in its progression³². It is most appropriate that PubMed's last entry for Prof. Galanello's publications, prior to his passing, was with his close friend and colleague, Dr. Antonio Piga³³, with whom he co-published 25 peer-reviewed papers.

Those who knew Renzo, recognized that his detailed investigation into scientific issues, in his specialized areas of expertise, did not detract from his ability to always keep an eye on the bigger picture. Having been, not only immersed in the treatment of thalassemia patients, but also intimately tuned into their aspirations and their very lives, he observed that a transition had been taking place since the 1970's, when he began attending to patients. When he started in the field, his goal was to help parents in detecting thalassemia in their unborn children, and giving them the choice to take preventative action, if they so chose. But by the mid 2000's, the focus began to evolve towards optimizing care for patients with thalassemia, as it became evident that with carefully targeted therapy, it was possible to decrease both morbidity and mortality and enable thalassemia patients to live full and productive lives, and even have children of their own. This insight led him to expound on the changing paradigm in thalassemia in an important scientific communication, titled "A thalassemic child becomes adult³⁴." Indeed, within 7 years, he would publish another paper citing the growing numbers of pregnancies in thalassemia patients in Italy, reporting on their enhanced ability to become pregnant and safely bring their own children into the world³⁵.

These scientific and medically important contributions made by Dr. Renzo Galanello were sufficient to warrant IBIS to commission a commemorative discourse on his life, but, personally, I saw this man, as a human being, even larger than the great scientist/clinician he was. His life embodied gentleness, humility and a profound care and respect of others, whether in his professional or his social life. Often when we would discuss issues, he would tell me what his patients said, what his patients wanted and what he wanted to do to meet their needs, not in a patronizing way, but more as one friend caring for another. He was ambitious, but not for self-aggrandizement, but rather ambitious to do the best he could in science, medicine and in life generally. Many of us can reflect back on personal moments with Renzo, moments that remain etched in our memories because of his unique way of making you a part of his life.

He lived modestly, in a cozy apartment in Cagliari with his wife and children, until the time his children pursued higher education. On his small balcony, he grew flowers and vegetables. I have a vivid recollection of Renzo showing me small round tomatoes that he was growing there. They had intermingled green and red blotches. They were visually unappealing, but I was delighted that he insisted I taste them, because they were, unquestionably, the most succulent tomatoes I ever had occasion to savor. I chalked that up to Renzo's appreciation of genetic engineering, but more likely it was related to his passion for cooking. It was always a delight to eat a meal prepared by Renzo. Whether it was fresh mushrooms he had picked in the forest the previous day, or the fresh fish his family had purchased at the market down by the sea early that morning, or the olive oil he had pressed from his parents' olive grove in Umbria, it was always tasty. His food, like his life, was never overbearing, but always crafted to perfection. It was seasoned to bring out the natural tastes of the food, with slight enhancements of carefully chosen seasoning, in true Italian culinary tradition, one of Renzo's many talents, which I will miss.

If you took time to talk about life's issues with Renzo, you would soon realize that, as he did in science, he thought, and cared, deeply about important matters in life, like family, friends and nature, seeking to be honest and respectful of all. His love and understanding of nature would emerge as you walked with him down to the sea by his summer home, where he loved to swim in the crystal azure waters of the Mediterranean, feeling refreshed, as it were, by nature herself. On the way he would sensitize you to the array of scents arising from the flowers growing along the path down to the sea. He was as much an expert here as he was in his lab.

In all likelihood, Renzo Galanello never understood the respect and admiration that his colleagues had for his work, and even more so, for the person he was. Those of us who had the privilege of knowing him, whether as a deeply caring clinician, or as an accomplished scientist or as a man who made a difference, all want to thank him for all he did to make our world a better place.

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