



EASL Recognition Awardee for 2014: Prof. Tilman Sauerbruch

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I first met Prof. Sauerbruch at a Falk Symposium in February 1998. It was my first trip to Bonn and my first attendance at a Falk Symposium. It was a little daunting, as I hardly knew anyone there. I felt very dwarfed by the academic giants of the day in portal hypertension/cirrhosis who were present. It was Prof. Sauerbruch who made a point of putting me at ease, and made sure that I was able to enjoy the meeting both scholastically and socially. It was only afterwards that I realized Prof. Sauerbruch was one of the notables in portal hypertension, in addition to being very well known for his outstanding contribution to the management of gall stone disease. From that moment on, I have gotten to know Prof. Sauerbruch not only as a well-respected scientist in the field of portal hypertension, but also as a superb mentor to his trainees, and a wonderful clinician to his patients.

Prof. Sauerbruch received his undergraduate medical education from the universities in Würzburg, Hamburg, Montpellier, and Heidelberg. After an internship at the University of Heidelberg, he trained in Internal Medicine and Gastroenterology in Heidelberg, Pforzheim and Munich from 1973 to 1979. He spent his residency at the University of Munich, and then served as Assistant Professor at the Medical Department II of the University of Munich from 1983 to 1991. After a brief period as an Associate Professor at the University of Munich, Medical Department II, he received a full professorship at the University of Bonn and became head of the Department for Internal Medicine I (General Internal Medicine) in 1992. During that period, he dedicated part of his time as Vice Dean, then Dean at the University of Bonn, thus spanning his service into higher education.

His interest in gastroenterology started when he was a student at the University of Heidelberg, when his teacher there introduced him to do a research project on acute and chronic hepatitis. His interest grew after he read a paper by B.S. Blumberg [1] on the discovery of the Australian antigen as a marker of serum hepatitis, or hepatitis B as we know it today. This led to further research into the testing for the Australian antigen in at-risk populations. He ventured into Africa and worked there as a junior doctor, while searching for the Australian antigen amongst the indigenous population. The work ultimately formed the basis of his doctoral thesis [2,3]. His enthusiasm for hepatology then became firmly established.

He recalls that his happiest time was when he spent tireless hours in the 1980's working with his mentor, Prof. Gustav



Paumgartner at the University of Munich on the dissolution of gallstones. Prof. Paumgartner is a life-long researcher on the pathogenesis of gallstone disease. Although the use of ursodeoxycholic acid is able to dissolve gall stones the process is painstakingly slow. Prof. Sauerbruch, together with Dr Michael Delius and Prof. Paumgartner, then devised the use of extracorporeal shock wave lithotripsy as a non-surgical means of disintegrating gallstones [4] and bile duct stones [5]. This was ground-breaking in the management of gall stones. This was subsequently extended into the management of pancreatic stones [6]. I can still recall, as a trainee in gastroenterology in Australia at that time, that the various senior gastroenterologists at my hospital visited Munich to learn the technique. Little did I know that one day, I would have the privilege to get to know these eminent individuals myself. Their work on gallstone dissolution was soon extended to experiments on treatment of bile duct injuries. The insertion of a biliary stent as its treatment was quite revolutionary at that time [7]. Prof. Paumgartner also had a significant impact on the young Prof. Sauerbruch in many other ways. He taught him that

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Editorial

the best mode of scientific enquiries was to perform multi-center randomized controlled trials. Thus we see many landmark papers were generated from these randomized controlled trials [8,9]. Prof. Paumgartner also taught him how to write scientific papers, enjoy literature and music. Most importantly, Prof. Paumgartner set an example on how to nurture the younger generation of medical students and trainees. The same attributes can easily be found in Prof. Sauerbruch, who not only worries about the academic achievements of his own trainees, but also their personal development and well-being. So during my visit to Prof. Sauerbruch in Bonn in 2004, he invited one of his research fellows, Zhou Qi, who was from China but alone in Bonn to join us for lunch, and afterwards she spent the day with us and his wife, Astrid, visiting the Augustusburg Palace in Brühl.

Prof. Sauerbruch's work on portal hypertension started in Munich around the same time that he was working on his gall stone projects. Together with his fellow hepatologists, he published widely on topics related to treatment of bleeding esophageal varices using sclerotherapy, the standard of care at the time. He devised various techniques to measure the intra-variceal pressure, such as fine needle direct puncture technique and a balloon technique, and correlated the pressure with endoscopic signs and severity of liver disease in patients [10]. His expertise was called upon to help define and set standards in methodology, and therapeutic strategies in portal hypertension at the inaugural Baveno meeting on portal hypertension [11].

After moving to Bonn in 1992, his work on gallstones ceased, and he concentrated his research on portal hypertension. Despite heavy administrative duties as head of the Department of Internal Medicine, he never neglected his research activities. It was during this period that he devised many experiments, manipulating the portal circulation in order to understand the pathophysiology of portal hypertension. It was this common interest in the pathophysiology of portal hypertension that consolidated our friendship. There were many exchanges of ideas, and I have been most amazed by his clear thinking, and his innovative viewpoints. Therefore, it was no surprise when I saw his publications on the novel use of transjugular intrahepatic porto-systemic stent shunt (TIPS) as a treatment for hepatorenal syndrome [12,13]. This set of experiments taught us that portal hypertension is intricately involved in the pathogenesis of renal dysfunction in cirrhosis. Prof. Sauerbruch then went on to manipulate the portal circulation with different pharmacological agents to further elucidate the mechanisms involved in the pathogenesis of portal hypertension. Thus we see such original concepts of using atorvastatin to inhibit the hepatic RhoA/Rho-kinase system while simultaneously activating endothelial nitric oxide synthase to induce a reduction in intrahepatic resistance, with a consequent reduction in portal pressure [14]. Atorvastatin also attenuates hepatic fibrosis by decreasing hepatic stellate cell turnover [15], further contributing to a reduction in intra-hepatic resistance. Other pharmacological manipulations included the use of irbesartan and losartan to attenuate portal hypertension by counteracting the impaired vascular responsiveness of the splanchnic vessels to alpha1-adrenoceptor agonists [16,17]. Using the same meticulous approach, he further extended his investigations into the renal complications of cirrhosis. He reported on the preservation of renal functional reserve in patients with advanced cirrhosis and ascites [18]. He also documented that the use of low dose losartan was able to improve the renal function in an experimental model of cirrhosis via the

inhibition of the intra-renal renin-angiotensin system [19]. This provides a potential for maintaining renal function in cirrhosis in situations where renal dysfunction can occur. Thus we see that his investigations extend far into every aspect of portal hypertension, and his breadth of knowledge exceeds that of many of his peers. A search in PubMed identifies 694 articles that he has authored or co-authored to date. All of this hard work always comes back to his one aim: to improve the outcome of his patients with cirrhosis and portal hypertension.

Despite his busy schedule, Prof. Sauerbruch always finds time to be involved with the hepatology community. He was the President of the German Society of Gastroenterology in 2001–2, as well as of the President of the German Association for the Study of the Liver in 2009–10. In addition, he has served as a member of the editorial board of many prestigious journals such as *GUT*, and the *Journal of Hepatology*. It is still a secret how he finds time to fit in his many commitments, as he has never failed to spend time with his trainees. His former fellow, now Prof. Michael Schepke, fondly remembers him as the mentor who always challenged him with new ideas, and encouraged him to try fresh approaches to find answers to scientific questions. Two other former trainees, now Prof. Jörg Heller and Dr Jonel Trebicka, helped build up and now maintain his portal hypertension laboratory. Their combined effort of more than 80 publications on various aspects of portal hypertension is a testimony of their close working relationship. Of course Prof. Sauerbruch humbly acknowledges that his work in portal hypertension would not have flourished without these young individuals as the pillars in his laboratory. Prof. Schepke also affectionately remembers Prof. Sauerbruch rushing home every night on his bicycle, rolling downhill, never caring for red lights, speed limits, nor one-way street directions, because there is nothing more important to him than his family, especially his grandson Pauli. We met Pauli in 2004, a gregarious child of 2 years, who very naturally hopped on my husband's shoulders for a ride on the way to dinner. Pauli has been Prof. Sauerbruch's pride and joy, and he spends his time teaching Pauli to horse ride and to ice-skate. Of course Prof. Sauerbruch himself is a brilliant ice skater, an accomplished equestrian, and an expert skier.

Having spent his entire career as a successful academic physician, one would expect Prof. Sauerbruch to retire after completing his 20-year term at the University of Bonn, and start enjoying his time with his family and his friends. It seems that his energetic personality does not allow him to stop working. He has just completed his position as the Temporary Head of the Department of Gastroenterology and Endocrinology, at the University of Göttingen. I am sure he will stay in touch with his colleagues and continue his efforts into new scientific enquiries. Congratulations to Prof. Sauerbruch for having been awarded the EASL Recognition Award. I count myself as being most privileged to have known Prof. Sauerbruch and to follow him as a role model in my academic endeavours.

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