

Prof. Christian P. Speer: to be a well trained and empathic clinician

Received: 15 July 2019; Accepted: 30 July 2019; Published: 19 August 2019.

doi: 10.21037/pm.2019.07.07

View this article at: <http://dx.doi.org/10.21037/pm.2019.07.07>

Editor's note

Pediatric Medicine (PM) is honored to have an interview with Prof. Christian P. Speer talking about the latest advances in the field of pediatrics including the surfactant treatment, Prof. Speer participated in the first-in-human trial, his journey to be a pediatrician, and his experience in academic work.

Expert's introduction

Prof. Christian P. Speer, MD, FRCPE (*Figure 1*) is Chairman and Director of the University Children's Hospital in Würzburg, Germany. He received his MD degree at the University of Göttingen, and completed postgraduate training in the Department of Pediatrics at the University of Göttingen in Germany. He completed a research fellowship at the National Jewish Hospital and Research Center in Denver, Colorado, USA in 1982–1983, and subsequently held appointments at the University of Göttingen (Associate Professor of Pediatrics and Neonatology) and became Professor of Pediatrics and Director of the Department Neonatology, University Children's Hospital Tübingen in 1994. In 1996 he was elected as Fellow of the Royal College of Physicians (Edin), and in 1999 he became Chairman and Director of the University Children's Hospital in Würzburg.

Prof. Speer's main areas of research interest include host defense mechanisms in neonates, early detection of neonatal systemic infections, clinical surfactant trials, basic surfactant research and inflammatory mechanisms in acute and chronic lung diseases of preterm infants. He has published more than 300 scientific articles in international and national journals and is author of many book chapters on acute and chronic pulmonary diseases in neonates.

He has been invited speaker at numerous congresses and symposia in Europe, North and South America, Asia, Australia, the Middle East and South Africa. In addition, he has served as secretary of the "Working Group on Neonatology" within the "European Society of Pediatric Research" (ESPR), and as board member of the "European



Figure 1 Prof. Christian P. Speer, MD, FRCPE.

Association of Perinatal Medicine" (EAPM). In 2004 he was the "Geoffrey Thorburn Visiting Professor" of the "Perinatal Society of Australia and New Zealand (PSANZ)" and in 2005 he was invited by the Hong Kong Pediatric Society to give the "James Hutchison's Memorial Lecture 2005". In addition, he received the "Chiesi Award for Excellence in Neonatology 2006" of the European Association of Perinatal Medicine. From 2010–2012 he was President of the European Association of Perinatal Medicine. In 2013 he was elected as Honorary Member of the American Pediatric Society for his major and internationally recognized contributions to pediatrics, and he became an Honorary Member of the Russian Perinatal Society. In 2014 he was awarded the "Maternité Prize of the European Association of Perinatal Medicine". In 2016 he was invited to give the prestigious "John J. Fangman Lectureship" at the Children's Hospital Minneapolis, University of Minnesota.

Together with Prof. HL Halliday, Belfast he is editor-in-chief of Neonatology, formerly Biology of the Neonate. Since 1996 he has regularly organized the international symposium Recent Advances in Neonatal Medicine which

has become the largest scientific and educational forum outside the United States of America. Together with Prof. Bo Sun, Shanghai he has organized “The Neonate – An International Symposium for Asia, Shanghai” in 2016 and 2018.

Interview

PM: *What made you get into the field of pediatrics? Over the years, who had great impacts on you?*

Prof. Speer: Already as a medical student I became fascinated with the wide spectrum of diseases in pediatric patients and the special clinical and scientific challenges in this field.

The academic mentor of my early years was Prof. Richard B. Johnston, USA. Since the mid 80ies Prof. Bengt Robertson, Prof. Tore Curstedt, both Stockholm, Prof. Henry Halliday, Belfast and Prof. Ola D. Saugstad, Oslo became close collaborators and friends.

PM: *Having been in the field of pediatrics for years, what do you think are the critical issues facing the field right now?*

Prof. Speer: For an optimal care of neonates, infants and children at all ages and periods of their developmental stages and for efficient structures of preventive medicine, health care providers, hospital administrations and others have to give pediatrics highest priority. An appropriate number of staff members in pediatric institutions especially university hospitals is crucial, these include well trained pediatricians, nurses and other medical professionals dealing with children. In addition, an adequate funding and investment program in the infrastructure of pediatric hospitals, research facilities and ambulatory structures are a prerequisite for quality and future progress in pediatric medicine.

PM: *What have been the most pivotal advance in terms of the treatment of acute and chronic pulmonary diseases in neonates in the last decades?*

Prof. Speer: There is a whole bundle of strategies which have contributed to the improved over-all outcome of high-risk neonates; in pulmonary care surfactant treatment for neonatal respiratory distress syndrome (RDS) is definitely a major breakthrough in neonatal medicine. Despite a high

number of very immature infants with bronchopulmonary dysplasia (BPD), the severity of this chronic lung disease has changed its pattern to a milder expression.

PM: *In 2017, your article “A first-in-human clinical study of a new SP-B and SP-C enriched synthetic surfactant (CHF5633) in preterm babies with respiratory distress syndrome” was published. We realized that this study in humans was under your guidance. Could you briefly introduce this trial, the stories behind it and any following trials?*

Prof. Speer: Randomized comparative trials have confirmed superiority of natural, animal derived surfactants containing surfactant proteins B and C, over synthetic surfactants comprised of phospholipids alone. A fully synthetic surfactant containing protein analogues would have potential advantages: no dependence on animal sources, standardized protein concentration and less batch-to-batch variability. We were able to perform the first-in-human trial with the synthetic surfactant CHF 5633 which contained peptide analogues of two surfactant proteins; this surfactant was primarily developed at the Karolinska Hospital, Stockholm (1). This surfactant was well tolerated and showed a promising clinical efficacy profile (2). A large randomized trial performed in the US, has just been finalized and first results seem to confirm the original findings.

PM: *The introduction of surfactant treatment into clinical practice has dramatically altered the outcome for preterm infants with, or at high-risk of developing RDS. What are the advantages and limitations of this treatment? Could you share with us your expectation for the future development of the treatment for RDS?*

Prof. Speer: Treatment with natural surfactants has considerably reduced acute lung injury and mortality of preterm infants with RDS; surfactant replacement is the best and most extensively evaluated therapy in neonatal medicine. Limitations of surfactant response are neonatal lung diseases which are not caused by a primary surfactant deficiency such as lung hypoplasia, genetic surfactant protein deficiencies and other rare pulmonary inborn diseases. Respiratory failure in inflammatory pulmonary diseases such as congenital pneumonia which induce surfactant inactivation and dysfunction may be overcome with high doses of surfactant.

Future developments will focus on less invasive surfactant administration in spontaneously breathing preterm infants on CPAP, on aerosolization of surfactant and the idea of utilizing the biophysical properties of natural surfactants as carrier for topical drugs.

PM: *Ureaplasma species (spp.) have been acknowledged as major causative pathogens in chorioamnionitis and prematurity, and may also contribute to key morbidities in preterm infants. In your opinion, what is the role of ureaplasma species in the morbidities in preterm infants? What are the future research directions of ureaplasma species?*

Prof. Speer: Ureaplasma species most likely contribute to the development of BPD and brain injury. It is of utmost importance to evaluate the mechanisms of intrauterine Ureaplasma infection of the fetus and to develop reliable diagnostic tests and, moreover, effective strategies of prevention and treatment.

PM: *You have been the editor for a series of popular books and one of them is named “Pädiatrie” (Pediatrics), which is very educational. Would you like to share with us your initial conception for this book?*

Prof. Speer: Our intention of the first edition published in the year 2000 was to present the fascinating field of pediatrics in a highly didactic and informative style as well as up-to-date knowledge not only for medical students but also pediatricians and physicians who take care of children. This concept was a success, and the 5th edition was just released.

PM: *You have published more than 300 scientific articles in international and national journals. Where do your sources of inspiration come from and how to be active in academic publishing?*

Prof. Speer: During my training in pediatrics and its subspecialties, I became fascinated with neonatology which became my clinical and scientific focus already in the beginning of 1980ies.

During this time many newborns died of early onset sepsis, and I was eager to learn more about the mechanisms of neonatal host defense and inflammatory mechanisms; these topics have remained my main area of translational research and opened up new insights into the pathogenesis of acute

and chronic lung injury in neonates. I was and I am definitely inspired by the research subjects and the progress in neonatology, moreover, by a number of outstanding clinicians and scientists, some of them are mentioned above. With a dedicated research group and international collaborations I am privileged to be part of an ongoing research program; our aim is to publish the results of our projects in time.

PM: *Together with Prof. HL Halliday, Belfast, you are editor-in-chief of Neonatology, an esteemed journal in the field. What does your role entail?*

Prof. Speer: Besides a first critical review and selection of the submitted manuscripts which will be sent out for review, I have to appoint appropriate international reviewers—sometimes more than 10—read their detailed reviews and judgements carefully and come to a conclusion. Since most of the manuscripts have to undergo a revision process, the editor has to deal with the reply and changes made by the authors and decide on final acceptance. This is quite time consuming but very interesting and rewarding activity. As editor-in-chief I receive a most recent update on the achievements in perinatal-neonatal medicine, and I have the opportunity to discuss manuscripts with Prof. Halliday whenever required.

PM: *Since 1996 you have regularly organized the international symposium Recent Advances in Neonatal Medicine, and in 2016 and 2018 you have organized together with Prof. Bo Sun, Shanghai the first and second edition of “the Neonate—An International Symposium for Asia, Shanghai”. What have been driving you to move forward to organize meetings?*

Prof. Speer: In 1996 I felt that the time had come to bring most prominent international neonatologists and leading scientists as well as practicing delegates from all continents together to define and discuss clinical standards and latest research findings in neonatal medicine, and I was able to organize “Recent Advances in Neonatal Medicine”. This international symposium which takes place in Würzburg in 3 yearly intervals has become the most prominent academic and educational meeting outside the USA attracting neonatologists from more than 70 nations. The next edition will be in Würzburg in April 26–28, 2020, www.recent-advances.com.

Prof. Sun and I decided to transfer this concept to China and other Asian countries and we have organized

“The Neonate – An International Symposium for Asia” in Shanghai, under the auspices of Fudan University, Shanghai, in the year 2016 and 2018.

With my academic and scientific background and the contact with numerous outstanding international neonatologists and researchers, I feel that it is my responsibility to organize symposia and workshops on the highest educational and scientific level. These conferences provide up-to-date knowledge and evidence-based guidelines which stimulate the international delegates to critically reflect their daily clinical practice and to identify urgent needs in clinical, translational or laboratory research.

PM: *Is there a specific research area you will be pursuing in the future and what do you hope to achieve?*

Prof. Speer: My ongoing research will focus on the molecular mechanisms of perinatal-neonatal inflammation. Hopefully, a better understanding of the injurious inflammatory pathways will open up avenues for prevention and treatment of various neonatal diseases.

PM: *Would you like to provide any advice for young physicians in their career path?*

Prof. Speer: First of all, young pediatricians and neonatologists who are aiming at a career in academic medicine should become well trained and empathic clinicians. Secondly, it is certainly of great help to have a supportive academic mentor, and of course, stimulating research projects. Thirdly, the ingredients of good science are novelty of research topics, excellent knowledge of the relevant literature, objectivity about the research project and intellectual honesty; never copy and paste published material in your work that you intend to publish.

Acknowledgments

We would like to express our sincerest gratitude to Prof. Christian P. Speer for sharing his stories, insights and opinions with us.

doi: 10.21037/pm.2019.07.07

Cite this article as: Zhou S. Prof. Christian P. Speer: to be a well trained and empathic clinician. *Pediatr Med* 2019;2:41.

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Pediatric Medicine*. The article did not undergo external peer review.

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at <https://pm.amegroups.com/article/view/10.21037/pm.2019.07.07/coif>). SZ reports that she is a full-time employee of AME Publishing Company (publisher of the journal). The author has no other conflicts of interest to declare.

Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Curstedt T, Calkovska A, Johansson J. New generation synthetic surfactants. *Neonatology* 2013;103:327-30.
2. Sweet DG, Turner MA, Straňák Z, et al. A first-in-human clinical study of a new SP-B and SP-C enriched synthetic surfactant (CHF5633) in preterm babies with respiratory distress syndrome. *Arch Dis Child Fetal Neonatal Ed* 2017;102:F497-503.

(Science Editor: Silvia Zhou, PM, pm@amegroups.com)