Magnetic nanoparticles: one step closer to the bedside?

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Metallic nanoparticles such as carbon-coated nanomagnets have recently been shown to be of particular interest for specific removal of pathogens and disease causing factors in intoxication, severe inflammatory response syndrome or sepsis, but also for drug delivery. Before bringing an application close to a clinical scenario, detailed assessment of interactions of particles with the according environment – in this case the vascular compartment - is mandatory to evaluate potential health risks. This presentation will focus on possible chances of magnetic nanoparticles showing promising results with regard to the use of a blood purification system. At the same time tests involving risk analysis will be presented elucidating clinically relevant possible harms.

Beatrice Beck Schimmer is Professor of Anaesthesiology at the University and University Hospital Zurich. After finishing Medical School at the University of Bern, she was trained as anaesthesiologist and emergency physician. In 1994, she joined the team of Professor Peter Ward, Immunopathology, at the University of Michigan, Ann Arbor, where she worked as a postdoctoral fellow in basic research, focusing on the role of the epithelial respiratory compartment in acute lung injury. Upon return, she built up a broad research platform for anaesthesiology and intensive care medicine at the University of Zurich. With a clinical activity of 50% as ‚Leitende Aerztin‘, she is involved in clinical work, teaching medical students and residents. Her research with basic, translational and clinical studies including topics such as acute lung injury, sepsis, pharmacological organ protection and nanomedicine is reflected in 70 peer-reviewed publications. Professor Beck Schimmer is counselor of the Swiss National Science Foundation, associate-editor of the journal „Anesthesiology“ and was recently elected as member of the Swiss Academy of Medical Sciences (SAMW). Within the Gender Equality Action Plan University of Zurich, she promoted in 2013 the program „Filling the gap“ for young talented academic women to increase the proportion of women in academic leadership positions.