

Focus on Microcirculation in Shock

Disrupted microcirculation has a key role in shock and septicemia. Here, Physical Vascular Therapy offers a new therapeutic approach.

BY ANDREAS WICKEL

DRESDEN. Shock and septicemia number among the most dreaded complications in intensive-care medicine. Disrupted micro-circulation makes a crucial contribution to the high mortality of up to 80 percent.

The reason for this the formation of multiple organ dysfunction syndrome (MODS) as the result of a drop in blood pressure and the sharp decrease in blood flow to vital organs, explained Professor Karl Werdan of the Heart Center of the University Hospital of Halle at the “Research Focus - The Smallest of Blood Vessels” conference in Dresden. Another aggravating factor is increasing age, which even in healthy patients can result in a decline in microcirculation, the “bottleneck of organ blood supply.”

Stabilization of blood pressure definitively does not represent a therapeutic option for influencing the smallest of blood vessels, and there

are still no medicinal options for improving the thus-far “intractable” microcirculation. Therefore, in an innovative approach in a pilot study as part of a doctoral thesis, the benefits of stimulating the microvascular systems of MODS patients through electromagnetic fields at low flux density is being tested with biorhythmically defined impulse configurations (BEMER® Physical Vascular Therapy). The goal of this microcirc-MODS study, performed by doctoral candidate Diethelm Kühnert of Martin Luther University of Halle-Wittenberg

Microcirculation is the bottleneck of the blood supply to vital organs!

Professor Karl Werdan

Heart Center of the University Hospital of Halle

together with Werdan, is to prevent the collapse of microcirculation in MODS and thus improve patients’ chances of survival.

In a total of ten patients at an internistic intensive care unit, microcirculation of the oral mucosa is examined in a four-day treatment interval before and after stimulation with Physical Vascular Therapy, as Kühnert reported at the Bemer company’s event.

In the process, the blood flow of the smallest blood vessels is examined with Sidestream dark field imaging/SDF, making it possible to determine the overall capillary density and the microcirculatory flow index. At the same time, further hemodynamic parameters are recorded and the safety of the procedure is checked.

Should the study, which will conclude no later than the beginning of the coming year, succeed, it will be followed by a multi-center evaluation, says Kühnert.