Was Sie aus diesem Essential mitnehmen können

- HBO-Effekte, wie die Hemmung der mitochondrialen Apoptose, Verbesserung des oxidativen Glukosemetabolismus sowie Hemmung der Neutrophileninvasion führen in Summe zur Eindämmung der Penumbra-Infarkt-Transformation beim SHT und Insult. Die Remyelinisierung von geschädigten Axonen in der Substantia alba sowie Induktion der neuronalen Vaskulogenese resultieren in signifikanten klinischen Verbesserungen bei chronischen Folgeschäden nach SHT im Sinne der Neuroregeneration
- Bei der von den amerikanischen HBO-Forschern Neubauer und Harch entwickelten „low-pressure-HBO“ werden Patienten mit neuro-psychiatrischen Spätschäden im chronischen Stadium des SHT einer wiederholten HBO mit 1,5 ATA unterzogen. Klinisch zeigt die wiederholte low-pressure-HBO eine eindrucksvolle Verbesserung der Symptomatik der posttraumatischen Belastungsstörung sowie des postkontusionellen Syndroms. Das morphologische Korrelat des klinisch sichtbaren HBO-Effekts kann dabei anhand zerebraler SPECT-Darstellungen belegt werden, indem sich eine deutliche Verbesserung zuvor hypoperfundierter Areale in verschiedenen Hirnregionen darstellen lässt.
- Von entscheidender Bedeutung bei der effektiven Anwendung der HBO in der Neurologie und Neurotraumatologie ist die maximale Verkürzung des Delays zwischen zerebralem Ereignis und Beginn der HBO auf unter 12 h. So ist bei der Akuttherapie des ischämischen Insults sowie des SHT ein therapeutischer Benefit sowohl in Bezug auf den morphologischen Parenchymerhalt als auch hinsichtlich des klinisch-funktionellen Ergebnisses fast ausschließlich bei einer HBO-Einleitung innerhalb 6 bis 12 h nach ischämischem Ereignis bzw. Reperfusionsbeginn zu erzielen.
- Weiterhin offen bleibt jedoch die Frage nach dem optimalen Behandlungsdruck beim akuten ischämischen Insult. Experimentell zeigte sich eine lineare Korrelation zwischen erhöhtem Behandlungsdruck (2,5–3,0 ATA) und

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Infarktbegrenzung sowie Verbesserung der neuronalen Funktionalität. Klinisch war jedoch diesbezüglich kein Unterschied zwischen einer HBO bei 1,5 ATA und 2,5 ATA zu verzeichnen. Die Überlegenheit der hochdosierten HBO bei akuten ischämischen Ereignissen kann möglicherweise auf die dosis-abhängige Hemmung der Leukozytenadhäsion am Gefäßendothel zurückgeführt werden, welche nach derzeitiger Meinung erst bei 2,5–3,0 ATA signifikant blockiert wird.

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