

Literaturverzeichnis

- [1] Durand, M. L.; Calderwood, S. B.; Weber, D. J.; Miller, S. I.; Southwick, F. S.; Caviness, V. S. und Swatz, M. N. (1993): Acute bacterial meningitis in adults, New Engl J Med (Band 328), Seite 21-28.
- [2] de Gans, J. und van de Beck, D. (2002): Dexamethasone in adults with bacterial meningitis, N. Engl. J. Med (Band 347), Nr. 20, Seite 1549-1556.
- [3] Bohr, V.; Paulson, O. B. und Rasmussen, N. (1984): Pneumococcal meningitis. Late neurologic sequelae and features of prognostic impact., Arch. Neurol. (Band 41), Nr. 10, Seite 1045-1049.
- [4] Schuchat, A.; Robinson, K.; Wenger, J. D.; Harrison, L. H.; Farley, M.; Reingold, A. L.; Lefkowitz, L. und Perkins, B. A. (1997): Bacterial meningitis in the United States in 1995. Active Surveillance Team, N. Engl. J. Med (Band 337), Nr. 14, Seite 970-976.
- [5] Kastenbauer, S. und Pfister, H. W. (2003): Pneumococcal meningitis in adults. Spectrum of complications and prognostic factors in a series of 87 cases, Brain (Band 126), Seite 1015-1025.
- [6] Pfister, H. W.; Borasio, G. D.; Dirnagl, U.; Bauer, M. und Einhäupl, K. M. (1992): Cerebrovascular complications of bacterial meningitis in adults, Neurology (Band 42), Seite 1497-1504.
- [7] Koedel, U.; Scheld, W. M. und Pfister, H. W. (2002): Pathogenesis and pathophysiology of pneumococcal meningitis, Lancet Infect. Dis. (Band 2), Nr. 12, Seite 721-736.
- [8] Nau, R. und Bruck, W. (2002): Neuronal injury in bacterial meningitis: mechanisms and implications for therapy, Trends Neurosci (Band 25), Nr. 1, Seite 38-45.
- [9] Scheld, W. M.; Koedel, U.; Nathan, B. und Pfister, H. W. (2002): Pathophysiology of bacterial meningitis: mechanism(s) of neuronal injury, J. Infect. Dis. (Band 186 Suppl 2), Nr. 1998, Seite S225-S233.
- [10] Kanegaye, J. T.; Soliman, P. und Bradley, J. S. (2001): Lumbar puncture in pediatric bacterial meningitis: defining the time interval for recovery of cerebrospinal fluid pathogens after parenteral antibiotic pretreatment, Pediatrics (Band 108), Seite 1169-1174.
- [11] Quagliarello, V. und Scheld, M. (1992): Bacterial Meningitis: Pathogenesis, Pathophysiology, and Progress., New Engl J Med (Band 327), Seite 864-872.
- [12] Spellerberg, B. und Tuomanen, E. I. (1994): Pathophysiology of pneumococcal meningitis, Ann Med (Band 26), Seite 411-418.
- [13] Fischer, H. und Tomasz, A. (1984): Production and release of peptidoglycan and wall teichoic acid polymers in pneumococci treated with beta-lactam antibiotics, J. Bacteriol. (Band 157), Nr. 2, Seite 507-513.
- [14] Mustafa, M. M.; Ramilo, O.; Mertsola, J.; Risser, R. C.; Beutler, B.; Hansen, E. J. und McCracken, G. H. (1989): Modulation of inflammation and cachectin activity in relation to treatment of experimental *Hemophilus influenzae* type b meningitis, J Infect Dis (Band 160), Seite 818-825.
- [15] Friedland, I. R.; Jafari, H. S.; Ehrett, S.; Rinderknecht, S.; Paris, M.; Coulthard, M.; Saxen, H.; Olsen, K. und McCracken, G. H. (1993): Comparison of endotoxin release by different antimicrobial agents and the effect on inflammation in experimental *Escherichia coli* meningitis, J Infect Dis (Band 168), Seite 657-662.

- [16] Nau, R.; Zysk, G.; Schmidt, H.; Fischer, F. R.; Stringaris, A. K.; Stuertz, K. und Bruck, W. (1997): Trovafloxacin delays the antibiotic-induced inflammatory response in experimental meningitis, *J Antimicrob Chemother* (Band 39), Seite 781-8.
- [17] Lutsar, I.; Friedland, I. R.; Jafari, H.; Wubbel, L; Ahmed, A.; Trujillo, M.; McCoig, C. C. und McCracken, G. H. (2003): Factors influencing the anti-inflammatory effect of dexamethasone therapy in experimental pneumococcal meningitis, *J Antimicrob Chemother* (Band 52), Seite 651-655.
- [18] Schneider, O.; Michel, U.; Zysk, G.; Dubuis, O. und Nau, R. (1999): Clinical outcome in pneumococcal meningitis correlates with CSF lipoteichoic acid concentrations, *Neurology* (Band 53), Nr. 7, Seite 1584-1587.
- [19] Braun, J. S.; Sublett, J. E.; Freyer, D.; Mitchell, T. J.; Cleveland, J. L.; Tuomanen, E. I. und Weber, J. R. (2002): Pneumococcal pneumolysin and H(2)O(2) mediate brain cell apoptosis during meningitis, *J.Clin.Invest* (Band 109), Nr. 1, Seite 19-27.
- [20] Stringaris, A. K.; Geisenhammer, J.; Bergmann, F.; Balshüsemann, C.; Lee, U.; Zysk, G.; Mitchell, T. J.; Keller, B. U.; Kuhnt, U.; Gerber, J.; Spreer, A.; Bähr, M.; Michel, U. und Nau, R. (2002): Neurotoxicity of pneumolysin, a major pneumococcal virulence factor, involves calcium influx and depends on activation of p38 mitogen-activated protein kinase, *Neurobiol Dis* (Band 11), Seite 355-368.
- [21] Wellmer, A.; Zysk, G.; Gerber, J.; Kunst, T.; von Mehring, M.; Bunkowski, S; Eiffert, H. und Nau, R. (2002): Decreased virulence of a pneumolysin-deficient strain of *Streptococcus pneumoniae* in murine meningitis, *Infect Immun* (Band 70), Nr. 11, Seite 6504-6508.
- [22] Tuomanen, E.; Liu, H.; Hengstler, B.; Zak, O. und Tomasz, A. (1985): The induction of meningeal inflammation by components of the pneumococcal cell wall, *J Infect Dis.* (Band 151), Seite 859-868.
- [23] Pfister, H. W.; Koedel, U.; Haberl, R. L.; Dirnagl, U.; Feiden, W.; Ruckdeschel, G. und Einhäupl, K. (1990): Microvascular changes during the early phase of experimental bacterial meningitis, *J Cereb Blood Flow Metab* (Band 10), Seite 914-922.
- [24] Haring, H. P.; Rotzer, H. K.; Reindl, H.; Berek, K.; Kampfl, A.; Pfausler, B. und Schmutzhard, E. (1993): Time course of cerebral blood flow velocity in central nervous system infections. A transcranial Doppler sonography study, *Arch.Neurol.* (Band 50), Seite 98-101.
- [25] Weber, J. R.; Freyer, D.; Alexander, C.; Schröder, N. W. J.; Reiss, A.; Küster, C.; Pfeil, D.; Tuomanen, E. I. und Schumann, R. R. (2003): Recognition of pneumococcal peptidoglycan: an expanded, pivotal role for LPS binding protein, *Immunity* (Band 19), Nr. 2, Seite 269-279.
- [26] Cauwels, A.; Wan, E.; Leismann, M. und Tuomanen, E. (1997): Coexistence of CD14-dependent and independent pathways for stimulation of human monocytes by gram-positive bacteria, *Infect Immun* (Band 65), Seite 3255-3260.
- [27] Nockher, W. A.; Wick, M. und Pfister, H. W. (1999): Cerebrospinal fluid levels of soluble CD14 in inflammatory and non-inflammatory diseases of the CNS: upregulation during bacterial infections and viral meningitis, *J Neuroimmunol* (Band 101), Nr. 2, Seite 161-169.
- [28] Cleveland, M. G.; Gorham, J. D.; Murphy, T. L.; Tuomanen, E. und Murphy, K. M. (1996): Lipoteichoic acid preparations of gram-positive bacteria induce interleukin-12 through a CD14-dependent pathway, *Infect Immun* (Band 64), Seite 1906-1912.
- [29] Schumann, R. R.; Pfeil, D.; Freyer, D.; Buerger, W.; Lamping, N.; Kirschning, C. J.;

- Goebel, U. B. und Weber, J. R. (1998): Lipopolysaccharide and pneumococcal cell wall components activate the mitogen activated protein kinases (MAPK) erk-1, erk-2, and p38 in astrocytes., *Glia* (Band 22), Nr. 3, Seite 295-305.
- [30] Yoshimura, A.; Lien, E.; Ingalls, R. R.; Tuomanen, E.; Dziarski, R. und Golenbock, D. (1999): Cutting edge: recognition of Gram-positive bacterial cell wall components by the innate immune system occurs via Toll-like receptor 2, *J.Immunol.* (Band 163), Nr. 1, Seite 1-5.
- [31] Koedel, U.; Bayerlein, I.; Paul, R.; Sporer, B. und Pfister, H. W. (2000): Pharmacologic interference with NF-kappaB activation attenuates central nervous system complications in experimental Pneumococcal meningitis, *J.Infect.Dis.* (Band 182), Nr. 5, Seite 1437-1445.
- [32] Koedel, U.; Angele, B.; Rupprecht, T.; Wagner, H.; Roggenkamp, A.; Pfister, H. W. und Kirschning, C. J. (2003): Toll-like receptor 2 participates in mediation of immune response in experimental pneumococcal meningitis, *J Immunol* (Band 170), Nr. 1, Seite 438-444.
- [33] Schroder, N. M.; Morath, S.; Alexander, C.; Hamann, L.; Hartung, T.; Zahringer, U.; Gobel, U. B.; Weber, J. R. und Schumann, R. R. (2003): Lipoteichoic acid (LTA) of *S. pneumoniae* and *S. aureus* activates immune cells via toll-like receptor (TLR)-2, LPS binding protein (LBP) and CD14 while TLR-4 and MD-2 are not involved, *J Biol Chem* (Band 278), Nr. 18, Seite 15587-15594.
- [34] Echchannaoui, H.; Frei, K.; Schnell, C.; Leib, S. L.; Zimmerli, W. und Landmann, R. (2002): Toll-like receptor 2-deficient mice are highly susceptible to *Streptococcus pneumoniae* meningitis because of reduced bacterial clearing and enhanced inflammation, *J Infect Dis* (Band 186), Nr. 6, Seite 798-806.
- [35] Hanisch, U. K.; Prinz, M.; Angstwurm, K.; Hausler, K. G.; Kann, O.; Kettenmann, H. und Weber, J. R. (2001): The protein tyrosine kinase inhibitor AG126 prevents the massive microglial cytokine induction by pneumococcal cell walls., *Eur.J.Immunol.* (Band 31), Nr. 7, Seite 2104-2115.
- [36] Monier, R. M.; Orman, K. L.; Meals, E. A. und English, B. K. (2002): Differential effects of p38- and extracellular signal-regulated kinase mitogen-activated protein kinase inhibitors on inducible nitric oxide synthase and tumor necrosis factor production in murine macrophages stimulated with *Streptococcus pneumoniae*, *J.Infect.Dis.* (Band 185), Nr. 7, Seite 921-926.
- [37] van Furth, A. M.; Roord, J. J. und van Furth, R. (1996): Roles of proinflammatory and anti-inflammatory cytokines in pathophysiology of bacterial meningitis and effect of adjunctive therapy, *Infect Immun* (Band 64), Nr. 12, Seite 4883-4890.
- [38] Tauber, M. G. und Moser, B. (1999): Cytokines and chemokines in meningeal inflammation: biology and clinical implications, *Clin Infect Dis* (Band 28), Nr. 1, Seite 1-11.
- [39] Saukkonen, K.; Sande, S.; Cioffe, C.; Wolpe, S.; Sherry, B.; Cerami, A. und Tuomanen, E. I. (1990): The role of cytokines in the generation of inflammation and tissue damage in experimental gram-positive meningitis, *Journal of Experimental Medicine* (Band 171), Seite 439-448.
- [40] Wellmer, A.; Gerber, J.; Ragheb, J.; Zysk, G.; Kunst, T.; Smirnov, A.; Bruck, W. und Nau, R. (2001): Effect of deficiency of tumor necrosis factor alpha or both of its receptors on *Streptococcus pneumoniae* central nervous system infection and peritonitis, *Infect Immun* (Band 69), Nr. 11, Seite 6881-6886.

- [41] Liu, L. und Kubes, P. (2003): Molecular mechanisms of leukocyte recruitment: organ-specific mechanisms of action, *Thromb Haemost* (Band 89), Seite 213-220.
- [42] Lorenzl, S.; Koedel, U.; Dirnagl, U.; Ruckdeschel, G. und Pfister, H. W. (1993): Imaging of leukocyte-endothelium interaction using in vivo confocal laser scanning microscopy during the early phase of experimental pneumococcal meningitis, *J Infect Dis* (Band 168), Seite 927-933.
- [43] Weber, J. R.; Angstwurm, K.; Rosenkranz, T.; Lindauer, U.; Freyer, D.; Burger, W.; Busch, C.; Einhaupl, K. M. und Dirnagl, U. (1997): Heparin inhibits leukocyte rolling in pial vessels and attenuates inflammatory changes in a rat model of experimental bacterial meningitis, *J.Cereb.Blood Flow Metab* (Band 17), Nr. 11, Seite 1221-1229.
- [44] Adamson, D. C.; Wildemann, B.; Sasaki, M.; Glass, J. D.; McArthur, J. C.; Christov, V. I.; Dawson, T. M. und Dawson, V. L. (1996): Immunologic NO synthase: elevation in severe AIDS dementia and induction by HIV-1 gp41, *Science* (Band 274), Nr. 5294, Seite 1917-1921.
- [45] Haas, J.; Meyding-Lamadé, U.; Fäth, A.; Stengele, K.; Storch-Hagenlocher, B. und Wildemann, B. (1999): Aciclovir treatment of experimental induced herpes simplex virus encephalitis: monitoring the changes in immunologic NO synthase expression and viral load within brain tissue of SJL mice, *Neurosci Lett* (Band 264), Seite 129-132.
- [46] Meyding-Lamadé, U.; Seyfer, S.; Haas, J.; Dvorak, F.; Kehm, R.; Lamadé, W.; Hacke, W. und Wildemann, B. (2002): Experimental herpes simplex encephalitis: inhibition of the expression of inducible nitric oxide synthase in mousebrain tissue, *Neurosci Lett* (Band 318), Seite 21-24.
- [47] Koedel, U.; Bernatowicz, A.; Paul, R.; Frei, K.; Fontana, A. und Pfister, H. W. (1995): Experimental pneumococcal meningitis: cerebrovascular alterations, brain edema, and meningeal inflammation are linked to the production of nitric oxide, *Ann.Neurol.* (Band 37), Seite 313-323.
- [48] Koedel, U. und Pfister, H. W. (1999): Oxidative stress in bacterial meningitis, *Brain Pathol* (Band 9), Nr. 1, Seite 57-67.
- [49] Pfister, H. W.; Koedel, U.; Lorenzl, S. und Tomasz, A. (1992): Antioxidants attenuate microvascular changes in the early phase of experimental pneumoccocal meningitis in rats, *Stroke* (Band 23), Seite 1798-1804.
- [50] Pfister, H. W.; Ködel, U.; Dirnagl, U.; Haberl, R. L.; Ruckdeschel, G. und Einhäupl, K. M. (1992): Effect of catalase on regional cerebral blood flow and brain edema during the early phase of experimental pneumococcal meningitis, *J Infect Dis* (Band 166), Seite 1442-1445.
- [51] Auer, L.; Pfister, L. A.; Leppert, D.; Tauber, M. G. und Leib, S. L. (2000): Effects of clinically used antioxidants in experimental pneumococcal meningitis, *J Infect Dis* (Band 182), Nr. 1, Seite 347-350.
- [52] Haberl, R. L.; Anneser, F.; Koedel, U. und Pfister, H. W. (1994): Is nitric oxide involved as a mediator of cerebrovascular changes in the early phase of experimental pneumococcal meningitis?, *Neurol.Res.* (Band 16), Seite 108-112.
- [53] Winkler, F.; Koedel, U.; Kastenbauer, S. und Pfister, H. W. (2001): Differential expression of nitric oxide synthases in bacterial meningitis: role of the inducible isoform for blood-brain barrier breakdown, *J Infect Dis* (Band 183), Nr. 12, Seite 1749-1759.
- [54] Koedel, U.; Paul, R.; Winkler, F.; Kastenbauer, S.; Huang, P. L. und Pfister, H. W.

- (2001): Lack of endothelial nitric oxide synthase aggravates murine pneumococcal meningitis, J Neuropathol Exp Neurol (Band 60), Nr. 11, Seite 1041-1050.
- [55] Kastenbauer, S.; Koedel, U.; Becker, B. F. und Pfister, H. W. (2002): Oxidative stress in bacterial meningitis in humans, Neurology (Band 58), Nr. 2, Seite 186-191.
- [56] Kastenbauer, S.; Koedel, U. und Pfister, H. W. (1999): Role of peroxynitrite as a mediator of pathophysiological alterations in experimental pneumococcal meningitis, J Infect Dis (Band 180), Nr. 4, Seite 1164-1170.
- [57] Tauber, M. G.; Khayam-Bashi, H. und Sande, M. A. (1985): Effects of ampicillin and corticosteroids on brain water content, cerebrospinal fluid pressure, and cerebrospinal fluid lactate levels in experimental pneumococcal meningitis, J Infect Dis (Band 151), Nr. 3, Seite 528-534.
- [58] Koedel, U.; Pfister, H. W. und Tomasz, A. (1994): Methylprednisolone attenuates inflammation, increase of brain water content and intracranial pressure, but does not influence cerebral blood flow changes in experimental pneumococcal meningitis, Brain Res. (Band 644), Seite 25-31.
- [59] Tancredi, D. N. und Binder, W. D. (2003): Dexamethasone in adults with bacterial meningitis, New Engl J Med (Band 348), Nr. 10, Seite 954.
- [60] Abril, V. und Ortega, E. (2003): Dexamethasone in adults with bacterial meningitis, New Engl J Med (Band 348), Nr. 10, Seite 954-955.
- [61] Joffe, A. R. (2003): Dexamethasone in adults with bacterial meningitis, New Engl J Med (Band 348), Nr. 10, Seite 955.
- [62] Poshkus, M. und Obaro, S. (2003): Dexamethasone in adults with bacterial meningitis, New Engl J Med (Band 348), Nr. 10, Seite 955.
- [63] Tunkel, A. R. und Scheld, W. M. (2002): Corticosteroids for everyone with meningitis?, N Engl J Med (Band 347), Nr. 20, Seite 1613-1615.
- [64] Zysk, G.; Bruck, W.; Gerber, J.; Bruck, Y; Prange, H. W. und Nau, R. (1996): Anti-inflammatory treatment influences neuronal apoptotic cell death in the dentate gyrus in experimental pneumococcal meningitis, J Neuropathol Exp Neurol (Band 55), Nr. 6, Seite 722-728.
- [65] Leib, S. L.; Heimgartner, C.; Bifrare, Y. D.; Loeffler, J. M. und Tauber, M. G. (2003): Dexamethasone aggravates hippocampal apoptosis and learning deficiency in pneumococcal meningitis in infant rats, Pediatr Res (Band 54), Nr. 3, Seite 353-357.
- [66] Nau, R.; Soto, A. und Bruck, W. (1999): Apoptosis of neurons in the dentate gyrus in humans suffering from bacterial meningitis, J Neuropathol Exp Neurol (Band 58), Nr. 3, Seite 265-274.
- [67] Maher, J. und Hachinski, V. (1993): Hypothermia as a potential treatment for cerebral ischemia., Cereb Brain Metab Rev (Band 5), Seite 277-300.
- [68] Marion, D. W.; Penrod, L. E.; Kelsey, S. F.; Obritz, W. D.; Kochanek, P. M.; Palmer, A. M.; Wisniewski, S. R. und DeKosky, S. T. (1997): Treatment of traumatic brain injury with moderate hypothermia., N Engl J Med. (Band 336), Nr. 8, Seite 540-546.
- [69] Clifton, G. L. (2004): Is keeping cool still hot? An update on hypothermia in brain injury, Curr Opin Crit Care (Band 10), Nr. 2, Seite 116-119.
- [70] Weber, J. R.; Angstwurm, K.; Burger, W.; Einhaupl, K. M. und Dirnagl, U. (1995): Anti ICAM-1 (CD 54) monoclonal antibody reduces inflammatory changes in experimental bacterial meningitis., J Neuroimmunol. (Band 63), Nr. 1, Seite 63-68.

- [71] Angstwurm, K.; Weber, J. R.; Segert, A.; Burger, W.; Weih, M.; Freyer, D.; Einhaupl, K. M. und Dirnagl, U. (1995): Fucoidin, a polysaccharide inhibiting leukocyte rolling, attenuates inflammatory responses in experimental pneumococcal meningitis in rats., Neurosci.Lett. (Band 191), Nr. 1-2, Seite 1-4.
- [72] Holtje, J. V. und Tomasz, A. (1975): Specific recognition of choline residues in the cell wall teichoic acid by the N-acetylmuramyl-L-alanine amidase of *Pneumococcus*, J.Biol.Chem. (Band 250), Nr. 15, Seite 6072-6076.
- [73] Garcia-Bustos, J. F.; Chait, B. T und Tomasz, A. (1987): Structure of the peptide network of pneumococcal peptidoglycan, J Biol Chem (Band 262), Nr. 32, Seite 15400-15405.
- [74] Tuomanen, E.; Tomasz, A.; Hengstler, B. und Zak, O. (1985): The relative role of bacterial cell wall and capsule in the induction of inflammation in pneumococcal meningitis, J Infect.Dis. (Band 151), Seite 535-540.
- [75] Angstwurm, K.; Hanisch, U.-K.; Gassemi, T.; Bastholm Bille, M.; Prinz, M.; Dirnagl, U.; Kettenmann, H. und Weber, J. R. (2004): Tyrosine kinase inhibition reduces inflammation in the acute stage of experimental pneumococcal meningitis, Infect Immun (Band 72), Seite 3294-3298.
- [76] Constantin, G.; Brocke, S.; Izikson, A.; Laudanna, C. und Butcher, E. C. (1998): Tyrphostin AG490, a tyrosine kinase inhibitor, blocks actively induced experimental autoimmune encephalomyelitis, Eur.J.Immunol. (Band 28), Nr. 11, Seite 3523-3529.
- [77] Constantin, G.; Laudanna, C.; Brocke, S. und Butcher, E. C. (1999): Inhibition of experimental autoimmune encephalomyelitis by a tyrosine kinase inhibitor, J.Immunol. (Band 162), Nr. 2, Seite 1144-1149.
- [78] Novogrodsky, A.; Vanichkin, A.; Patya, M.; Gazit, A.; Osherov, N. und Levitzki, A. (1994): Prevention of lipopolysaccharide-induced lethal toxicity by tyrosine kinase inhibitors, Science (Band 264), Seite 1319-1322.
- [79] Angstwurm, K.; Freyer, D.; Dirnagl, U.; Hanisch, U. K.; Schumann, R. R.; Einhaupl, K. M. und Weber, J. R. (1998): Tumour necrosis factor alpha induces only minor inflammatory changes in the central nervous system, but augments experimental meningitis, Neuroscience (Band 86), Nr. 2, Seite 627-634.
- [80] Angstwurm, K.; Reuss, S.; Freyer, D.; Arnold, G.; Dirnagl, U.; Schumann, R. R. und Weber, J. R. (2000): Induced hypothermia in experimental pneumococcal meningitis, J.Cereb.Blood Flow Metab (Band 20), Nr. 5, Seite 834-838.
- [81] Angstwurm, K.; Halle, E.; Wetzel, K; Schultze, J.; Schielke, E. und Weber, J. R. (2004): Isolated bacterial meningitis as the key syndrome of infective endocarditis, Infection (Band 32), Nr. 2, Seite 47-50.
- [82] Bademosi, O.; Falase, A. O.; Jaiyesimi, F. und Bademosi, A. (1976): Neuropsychiatric manifestations of infective endocarditis: a study of 95 patients at Ibadan, Nigeria, J.Neurol.Neurosurg.Psychiatry (Band 39), Nr. 4, Seite 325-329.
- [83] Austrian, R. (1957): Pneumococcal endocarditis, meningitis, and rupture of the aortic valve, Arch.Intern.Med (Band 99), Seite 539-544.
- [84] Osler, W. (1885): The goulstonian lectures on malignant endocarditis, Brit.Med.J. (Band 1), Seite 467-577.
- [85] Pfister, H. W.; Fontana, A.; Tauber, M. G.; Tomasz, A. und Scheld, W. M. (1994): Mechanisms of brain injury in bacterial meningitis: workshop summary., Clin.Infect.Dis. (Band 19), Nr. 3, Seite 463-479.

- [86] Pfister, H. W.; Müller, M. und Nau, R. (2003): DGN-Leitlinie: Bakterielle (eitrige) Meningoenzephalitis, <http://www.dgn.org/fileadmin/leitl/2003/MeningitisEitrig.pdf>.
- [87] Tunkel, A. R.; Hartman, B. J.; Kaplan, S. L.; Kaufman, B. A.; Roos, A.; Scheld, W. M. und Whitely, R. J. (2004): Practice guidelines for the management of bacterial meningitis, Clin Infect Dis (Band 39), Nr. 9, Seite 1267-1284.
- [88] Heasman, S. J.; Giles, K. M.; Ward, C.; Rossi, A. G.; Haslett, C. und Dransfield, I. (2003): Glucocorticoid-mediated regulation of granulocyte apoptosis and macrophage phagocytosis of apoptotic cells: implications for the resolution of inflammation, J Endocrinol (Band 178), Nr. 1, Seite 29-36.
- [89] Koedel, U.; Rupprecht, T.; Angele, B.; Heesemann, J.; Wagner, H.; Pfister, H. W. und Kirschning, C. J. (2004): MyD88 is required for mounting a robust host immune response to *Streptococcus pneumoniae* in the CNS, Brain (Band 127), Seite 1437-1445.
- [90] Spellerberg, B.; Rosenow, C.; Sha, W. und Tuomanen, E. I. (1996): Pneumococcal cell wall activates NF-kappa B in human monocytes: aspects distinct from endotoxin, Microb.Pathogen. (Band 20), Nr. 5, Seite 309-317.
- [91] Kastenbauer, S.; Koedel, U.; Weih, F.; Ziegler-Heitbrock, L. und Pfister, H. W. (2004): Protective role of NF-kappaB1 (p50) in experimental pneumococcal meningitis, Eur J Pharmacol (Band 498), Seite 315-318.
- [92] Dumont, R. A.; Car, B. D.; Voitenok, N. N.; Junker, U; Moser, B.; Zak, O. und O'Reilly, T. (2000): Systemic neutralization of interleukin-8 markedly reduces neutrophilic pleocytosis during experimental lipopolysaccharide-induced meningitis in rabbits, Infect Immun (Band 68), Nr. 10, Seite 5757-5763.
- [93] Zwijnenburg, P. J.; van der Poll, T.; Florquin, S.; Akira, S.; Takeda, K.; Roord, J. J. und van Furth, A. M. (2003): IL-1 receptor type 1 gene-deficient mice demonstrate an impaired host defense against pneumococcal meningitis, J Immunol (Band 170), Nr. 9, Seite 4724-4730.
- [94] Rozdzinski, E.; Jones, T.; Burnette, W. N.; Burroughs, M. und Tuomanen, E. I. (1993): Antiinflammatory effects in experimental meningitis of prokaryotic peptides that mimic selectins, J Infect Dis (Band 168), Seite 1422-1428.
- [95] Granert, C.; Raud, J.; Xie, X.; Lindquist, L. und Lindbom, L. (1994): Inhibition of leukocyte rolling with polysaccharide fucoidin prevents pleocytosis in experimental meningitis in the rabbit, J Clin Invest. (Band 93), Seite 929-936.
- [96] Tuomanen, E. I.; Saukkonen, K.; Sande, S.; Cioffe, C. und Wright, S. D. (1989): Reduction of inflammation, tissue damage, and mortality in bacterial meningitis in rabbits treated with monoclonal antibodies against adhesion-promoting receptors of leukocytes, Journal of Experimental Medicine (Band 170), Seite 959-968.
- [97] Rozdzinski, E.; Spellerberg, B.; van der Flier, M.; Bhattacharyya, C.; Hoepelman, A. I.; Moran, M. A.; Jarpe, A.; Putney, S. D.; Starzyk, R. M. und Tuomanen, E. (1995): Peptide from a prokaryotic adhesin blocks leukocyte migration in vitro and in vivo, J Infect Dis (Band 173), Nr. 3, Seite 785-793.
- [98] Rozdzinski, E.; Sandros, J.; van der Flier, M.; Young, A.; Spellerberg, B.; Bhattacharyya, C.; Straub, J.; Musso, G.; Putney, S.; Starzyk, R. und Tuomanen, E. (1995): Inhibition of leukocyte-endothelial cell interactions and inflammation by peptides from a bacterial adhesin which mimic coagulation factor X, J Clin Invest (Band 95), Nr. 3, Seite 1078-1085.
- [99] Braun, J. S.; Novak, R.; Herzog, K. H.; Bodner, S. M.; Cleveland, J. L. und Tuomanen,

- E. I. (1999): Neuroprotection by a caspase inhibitor in acute bacterial meningitis, Nat.Med. (Band 5), Nr. 3, Seite 298-302.
- [100] Azeh, I.; Mader, M.; Smirnov, A.; Beuche, W.; Nau, R. und Weber, F. (1998): Experimental pneumococcal meningitis in rabbits: the increase of matrix metalloproteinase-9 in cerebrospinal fluid correlates with leucocyte invasion, Neurosci Lett (Band 256), Nr. 3, Seite 127-130.
- [101] Paul, R.; Lorenzl, S.; Koedel, U.; Sporer, B.; Vogel, U.; Frosch, M. und Pfister, H. W. (1998): Matrix metalloproteinases contribute to the blood-brain barrier disruption during bacterial meningitis, Ann Neurol (Band 44), Nr. 4, Seite 592-600.
- [102] Kieseier, B. C.; Paul, R.; Koedel, U.; Seifert, T.; Clements, J. M.; Gearing, A. J. H.; Pfister, H. W. und Hartung, H. P. (1999): Differential expression of metalloproteinases in bacterial meningitis, Brain (Band 122), Seite 1579-1587.
- [103] Leib, S. L.; Leppert, D.; Clements, J. M. und Tauber, M. G. (2000): Matrix metalloproteinases contribute to brain damage in experimental pneumococcal meningitis, Infect Immun (Band 31), Seite 80-84.
- [104] Leppert, D.; Leib, S. L.; Grygar, C; Miller, K. M.; Schaad, U. B. und Hollander, G. A. (2000): Matrix metalloproteinase (MMP)-8 and MMP-9 in cerebrospinal fluid during bacterial meningitis: association with blood-brain barrier damage and neurological sequelae, Clin Infect Dis (Band 31), Seite 80-84.
- [105] Croughwell, N.; Smith, L. R.; Quill, T.; Newman, M.; Greeley, W.; Kern, F.; Lu, J. und Reves, J. G. (1992): The effect of temperature on cerebral metabolism and blood flow in adults during cardiopulmonary bypass., J.Thorac.Cardiovasc.Surg. (Band 103), Nr. 3, Seite 549-554.
- [106] Metz, C.; Holzschuh, M.; Bein, T.; Woertgen, C.; Frey, A.; Frey, I.; Taeger, K. und Brawanski, A. (1996): Moderate hypothermia in patients with severe head injury: cerebral and extracerebral effects., J.Neurosurg. (Band 85), Nr. 4, Seite 533-541.
- [107] Goss, J. R.; Styren, S. D.; Miller, P. D.; Kochanek, P. M.; Palmer, A. M.; Marion, D. W. und DeKosky, S. T. (1995): Hypothermia attenuates the normal increase in interleukin 1 beta RNA and nerve growth factor following traumatic brain injury in the rat., J.Neurotrauma. (Band 12), Nr. 2, Seite 159-167.
- [108] LeDeist, F.; Menasche, P.; Kucharski, C.; Bel, A.; Piwnica, A. und Bloch, G. (1995): Hypothermia during cardiopulmonary bypass delays but does not prevent neutrophil-endothelial cell adhesion. A clinical study., Circulation (Band 92), Nr. 9 Suppl, Seite II354-II358.
- [109] Haddix, T. L.; Pohlman, T. H.; Noel, R. F.; Sato, T. T.; Boyle-EM, Jr und Verrier, E. D. (1996): Hypothermia inhibits human E-selectin transcription., J.Surg.Res. (Band 64), Nr. 2, Seite 176-183.
- [110] Luhm, J.; Schromm, A. B.; Seydel, U.; Brandenburg, K.; Wellinghausen, N.; Riedel, E.; Schumann, R. R. und Rink, L. (1998): Hypothermia enhances the biological activity of lipopolysaccharide by altering its fluidity state., Eur.J.Biochem. (Band 256), Nr. 2, Seite 325-333.
- [111] Chatzipanteli, K.; Wada, K.; Bustó, R. und Dietrich, W. D. (1999): Effects of moderate hypothermia on constitutive and inducible nitric oxide synthase activities after traumatic brain injury in the rat, J Neurochem (Band 72), Nr. 5, Seite 2047-2052.
- [112] Vitarbo, E. A.; Chatzipanteli, K.; Kinoshita, K.; Truettner, J. S.; Alonso, O. F. und Dietrich, W. D. (2004): Tumor necrosis factor alpha expression and protein levels after fluid percussion injury in rats: the effect of injury severity and brain temperature,

Neurosurgery (Band 55), Nr. 2, Seite 416-424.

- [113] Clifton, G. L.; Miller, E. R; Choi, S. C.; Levin, H. S.; McCauley, S.; Smith, K. R.; Muizelaar, J. P.; Wagner, F. C.; Marion, D. W.; Luerssen, T. G.; Chestnut, R. M. und Schwartz, M. (2001): Lack of effect of induction of hypothermia after acute brain injury, New Engl J Med (Band 344), Nr. 8, Seite 556-563.
- [114] Siaperas, P; Pefanis, A.; Iliopoulos, D.; Katsarolis, I; Kyroudi-Voulgari, A.; Donta, I; Karayiannakos, P. und Giambarellou, H. (2001): Evidence of less severe aortic valve destruction after treatment of experimental staphylococcal endocarditis with vancomycin and dexamethasone, Antimicrob Agents Chemother (Band 45), Nr. 12, Seite 3531-3537.
- [115] Kox, W. J.; Volk, T; Kow, S. N. und Volk, H. D. (2000): Immunomodulatory therapies in sepsis, Intensive Care Med (Band 26), Nr. S1, Seite S124-S128.