

7. Literaturverzeichnis

1. Herold G: Innere Medizin, Köln 1998: S. 178
2. Herold G: Innere Medizin, Köln 1998: S. 179
3. Lee JA, Allen DG. Changes in intracellular free calcium concentration during long exposures to simulated ischemia in isolated mammalian ventricular muscle. Circ Res 1992; 71: 58-69
4. Braunwald E: Heart disease, a textbook of cardiovascular medicine, 5th edition, Philadelphia / USA 1997: S. 1177
5. Steenbergen C, Murphy E, Watts JA, London RE. Correlation between cytosolic free calcium, contracture, ATP, and irreversible ischemic injury in perfused rat heart. Circ Res 1990; 66: 135-46
6. Herold, G: Innere Medizin, Köln 1998: S. 191-192
7. Braunwald, E: Heart disease, a textbook of cardiovascular medicine, 5th edition, Philadelphia / USA 1997: S. 1213
8. Engler RL, Schmidt-Schonbein GW, Pavelec RS. Leukocyte capillary plugging in myocardial ischemia and reperfusion in the dog. Am J Pathol 1983; 111: 98-111
9. Arnold JM, Antman EM, Przyklenk K, et al. Differential effects of reperfusion on incidence of ventricular arrhythmias and recovery of ventricular function at 4 days following coronary occlusion. Am Heart J 1987; 113: 1055-65
10. Hearse DJ. Reperfusion-induced injury: a possible role for oxidant stress and its manipulation. Cardiovasc. Drugs Ther 1991; 5 Suppl. 2: 225-35
11. Romson JL, Hook BG, Kunkel SL, et al. Reduction of the extent of ischemic myocardial injury by neutrophil depletion in the dog. Circulation 1983; 67: 1016-23
12. Yokoyama T, Vaca L, Rossen RD, et al. Cellular basis for the negative inotropic effects of tumor necrosis factor-alpha in the adult mammalian heart. J Clin Invest 1993; 92: 2303-12
13. Kinugawa K, Takahashi T, Kohmoto O, et al. Nitric oxide-mediated effects of interleukin-6 on Ca²⁺ and cell contraction in cultured chick ventricular myocytes. Circ Res 1994; 75: 285-95
14. Squadrito F, Loculano M, Altavilla D, et al. Platelet activating factor interaction with tumor necrosis factor in myocardial ischaemia-reperfusion injury. J Lipi Mediat 1993; 8: 53-65
15. Stahl GL, Lefer AM. Mechanism of platelet-activating factor-induced cardiac depression in the isolated perfused rat heart. Circ Shock 1987; 23: 165-77
16. Jeroudi MO, Hartley CJ, Bolli R. Myocardial reperfusion injury: role of oxygen radicals and potential therapy with antioxidants. Am J Cardiol 1994; 73: 2B-7B

17. Bolli R, Zughaib M, Li XY, et al. Recurrent ischemia in the canine heart causes bursts of free radical production that have a cumulative effect on contractile function. A pathophysiological basis for chronic myocardial “stunning”. *J Clin Invest* 1995; 96: 1066-84
18. Bolli R, Jeroudi MO, Patel BS, et al. Marked reduction of free radical generation and contractile dysfunction by antioxidant therapy begun at the time of reperfusion. Evidence that myocardial “stunning” is a manifestation of reperfusion injury. *Circ Res* 1989; 65: 607-22
19. Marban E, Koretsune Y, Coretti M, Chacko VP, Kusuoka H. Calcium and its role in myocardial cell injury during ischemia and reperfusion. *Circulation* 1989; 80: 17-22
20. Duilio C, Ambrosio G, Kuppusamy P, et al. Neutrophils are primary source of O₂ radicals during reperfusion after prolonged myocardial ischemia. *Am J Physiol Heart Circ Physiol* 2001; 280: H2649-57
21. Engler R, Covell JW. Granulocytes cause reperfusion ventricular dysfunction after 15-minute ischemia in the dog. *Circ Res* 1987; 61: 20-8
22. Malatiali SA, Juggi JS. Role of polymorphonuclear leukocytes in reperfusion injury of globally ischemic rat heart. *Can J Cardiol* 1995; 11: 147-58
23. Stangl V, Baumann G, Stangl K, Felix SB. Negative inotropic mediators released from the heart after myocardial ischaemia-reperfusion. *Cardiovasc Res* 2001; 1: 1-19
24. Kaneko M, Beamish RE, Dhalla NS. Depression of heart sarcolemmal Ca²⁺-pump activity by oxygen free radicals. *Am J Physiol* 1989; 256: 368-74
25. Vinnikova AK, Kukrueja RC, Hess ML. Singlet oxygen-induced inhibition of cardiac sarcolemmal Na⁺K⁽⁺⁾-ATPase. *J Mol Cell Cardiol* 1992; 24: 465-70
26. Eley DW, Eley JM, Korecky B, Fliss H. Impairment of cardiac contractility and sarcoplasmic reticulum Ca²⁺ ATPase activity by hypochlorous acid: reversal by dithiothreitol. *Can J Physiol Pharmacol* 1991; 69: 1677-85
27. Josephson RA, Silverman HS, Lakatta EG, Stern MD, Zweier JL. Study of the mechanism of hydrogen peroxide and hydroxyl free radical-induced cellular injury and calcium overload in cardiac myocytes. *J Biol Chem* 1991; 266: 2354-61
28. Kusuoka H, Porterfield JK, Weisman HF, Weisfeldt ML, Marban E. Pathophysiology and pathogenesis of stunned myocardium. Depressed Ca²⁺ activation of contraction as a consequence of reperfusion-induced cellular calcium overload in ferret hearts. *J Clin Invest* 1987; 79: 950-61
29. Kusuoka H, Koretsune Y, Chacko VP, et al. Excitation-contraction coupling in postischemic myocardium. Does failure of activator Ca²⁺ transient underlie stunning? *Circ Res* 1990; 66: 1268-76

30. Gao WD, Atar D, Backx PH, Marban E. Relationship between intracellular calcium and contractile force in stunned myocardium. Direct evidence for decreased myofilament Ca^{2+} responsiveness and altered diastolic function in intact ventricular muscle. *Circ Res* 1995; 76: 1036-48
31. Gao WD, Atar D, Liu Y, Perez NG, Murphy AM, Marban E. Role of troponin I proteolysis in the pathogenesis of stunned myocardium. *Circ Res* 1997; 80: 393-9
32. Hoffmeister HM, Mauser M, Schaper W. Effect of adenosine and AICAR on ATP content and regional contractile function in reperfused canine myocardium. *Basic Res Cardiol* 1985; 80: 445-58
33. Bolli R, Zhu WX, Myers ML, Hartley CJ, Roberts R. Beta-adrenergic stimulation reverses postischemic myocardial dysfunction without producing subsequent functional deterioration. *Am J Cardiol* 1985; 56: 964-8
34. Guth BD, Schulz R, Heusch G. Time course and mechanism of contractile dysfunction during acute myocardial ischemia. *Circulation* 1993; 87: IV35-42
35. Bolli R, Jeroudi MO, Patel BS, et al. Direct evidence that oxygen-derived free radicals contribute to postischemic myocardial dysfunction in the intact dog. *Proc Natl Acad Sci USA* 1989; 86: 4695-9
36. Hearse DJ. Free radicals and the heart. *Bratisl Lek Listy* 1991; 92: 115-8
37. Sekili S, Jeroudi MO, Tang XL, et al. Effect of adenosine on myocardial “stunning” in the dog. *Circ Res* 1995; 76: 82-94
38. Lasley RD, Mentzer RM. Protective effects of adenosine in the reversible injured heart. *Ann Thorc Surg* 1995; 60: 834-6
39. Heusch G, Schulz R. Characterization of hibernating and stunned myocardium. *Eur Heart J* 1997; 18: 102-10
40. Ehring T, Bohm M, Heusch G. The calcium antagonist nisoldipine improves the functional recovery of reperfused myocardium only when given before ischemia. *J Cardiovasc Pharmacol* 1992; 20: 63-74
41. Ehring T, Baumgart D, Krajcar M, et al.: Attenuation of myocardial stunning by the ACE inhibitor ramiprilat through a signal cascade of bradykinin and prostaglandins but not nitric oxide. *Circulation* 1994; 90: 1368-85
42. Detjeen P: Physiologie. 2. Aufl., Urban und Schwarzenberg, 1994: S. 284
43. Löffler P: Biochemie und Pathobiochemie. 5.Aufl., Springer Verlag, 1997: S. 885

44. Forth W: Allgemeine und spezielle Pharmakologie und Toxikologie für Studenten der Medizin, Veterinärmedizin, Pharmazie, Chemie, Biologie sowie für Ärzte, Tierärzte und Apotheker. 7. Aufl., Heidelberg 1996: S. 347-348
45. Charlat MI, O Neil PG, Egan JM, et al. Evidence for a pathogenetic role of xanthine oxidase in the “stunned” myocardium. *Am J Physiol* 1987; 252: 566-77
46. Forth W: Allgemeine und spezielle Pharmakologie und Toxikologie für Studenten der Medizin, Veterinärmedizin, Pharmazie, Chemie, Biologie sowie für Ärzte, Tierärzte und Apotheker. 7. Aufl., Heidelberg 1996: S. 350
47. Ma XL, Tsao PS, Viehmann GE, Lefer AM. Neutrophil-mediated vasoconstriction and endothelial dysfunction in low-flow perfusion-reperfused cat coronary artery. *Circ Res* 1991; 69: 95-106
48. Tsao PS, Ma XL, Lefer AM. Activated neutrophils aggravate endothelial dysfunction after reperfusion of the ischemic feline myocardium. *Am Heart J* 1992; 123: 1464-71
49. Lefer AM, Lefer DJ. The role of nitric oxide and cell adhesion molecules on the microcirculation in ischaemia-reperfusion. *Cardiovasc Res* 1996; 32: 743-51
50. Pabla R, Buda AJ, Flynn DM, et al. Nitric oxide attenuates neutrophil-mediated myocardial contractile dysfunction after ischemia and reperfusion. *Circ Res* 1996; 78: 65-72
51. Ma XL, Tsao PS, Lefer AM. Antibody to CD-18 exerts endothelial and cardiac protective effects in myocardial ischemia and reperfusion. *J Clin Invest* 1991; 88: 1237-43
52. Lefer DJ, Shandelya SM, Serrano CV, et al. Cardioprotective actions of a monoclonal antibody against CD-18 in myocardial ischemia-reperfusion injury. *Circulation* 1993; 88: 1779-87
53. Entman ML, Youker K, Shappell SB, et al. Neutrophil adherence to isolated adult canine myocytes. Evidence for a CD-18 dependent mechanism. *J Clin Invest* 1990; 85: 1497-506
54. Montruccchio G, Alloatti G, Mariano F, et al. Role of platelet-activating factor in polymorphonuclear neutrophil recruitment in reperfused ischemic rabbit heart. *Am J Pathol* 1993; 142: 471-80
55. Alloatti G, Montruccchio G, Emanuelli G, Camussi G. Platelet-activating factor (PAF) induces platelet/neutrophil co-operation during myocardial reperfusion. *J Mol Cell Cardiol* 1992; 24: 163-71
56. Crawford MH, Grover FL, Kolb WP, et al.: Complement and neutrophil activation in the pathogenesis of ischemic myocardial injury. *Circulation* 1988; 78: 1449-58
57. Amsterdam EA, Stahl GL, Pan HL, et al. Limitation of reperfusion injury by a monoclonal antibody to C5a during myocardial infarction in pigs. *Am J Physiol* 1995; 268: 448-57

58. Detjeen P: Physiologie. 2. Aufl., Urban und Schwarzenberg, 1994: S. 314-315
59. Braunwald E: Heart disease, a textbook of cardiovascular medicine, 5th edition, Philadelphia / USA (1997): S. 372-374
60. Estler CJ: Pharmakologie und Toxikologie. 4. Aufl., Schattauer, 1994: S. 64
61. Persad S, Takeda S, Panagia V, Dhallas NS. Beta-adrenoceptor-linked signal transduction in ischemic-reperfused heart and scavenging of oxyradicals. *J Mol Cell Cardiol* 1997; 29: 545-58
62. Persad S, Elimban V, Kaila J, Dhalla NS. Biphasic alterations in cardiac beta-adrenoceptor signal transduction. *J Pharmacol Exp Ther* 1997; 282: 1623-31
63. Persad S, Rupp H, Jindal R, Arneja J, Dhalla NS. Modification of cardiac beta-adrenoceptor mechanism by H₂O₂. *Am J Physiol* 1998; 274: 416-23
64. Persad S, Dhalla NS. Modification of beta-adrenoceptor and adenylyl cyclase in hearts perfused with hypochlorous acid. *Can J Physiol Pharmacol* 1998; 76: 961-6
65. Persad S, Elimban V, Siddiqui F, Dhalla NS. Alterations in cardiac membrane β-adrenoceptors and adenylyl cyclase due to hypochlorous acid. *J Mol Cell Cardiol* 1999; 31: 101-111
66. Delerive PH, Oudot F, Ponsard B, et al. Hypoxia-reoxygenation and polyunsaturated fatty acids modulate adrenergic functions in cultured cardiomyocytes. *J Mol Cell Cardiol* 1999; 31: 377-386
67. Bartels LA, Clifton GD, Szabo TS. Influence of myocardial ischemia and reperfusion on beta-adrenoceptor subtype expression. *J Cardiovasc Pharmacol* 1998; 31: 484-7
68. Fu LX, Llebekk A, Kirkeben KA, et al.: Oxygen free radical injury and Gs mediated signal transduction in the stunned porcine myocardium. *Cardiovasc Res* 1992; 26: 449-55
69. Silbernagel S: Taschenatlas der Physiologie. 4. Aufl., Thieme, 1991: S. 38
70. Brixius K, Pietsch M, Hoischen S, et al. Effect of inotropic interventions on contraction and on Ca²⁺ transients in the human heart. *J Appl Physiol* 1997; 83: 652-660
71. Hoffmeister HM, Ströbele M, Beyer ME, et al. Inotropic response of stunned hypertrophied myocardium: responsiveness of hypertrophied and normal postischemic isolated rat hearts to calcium and dopamine stimulation. *Cardiovasc Res* 1998; 38: 149-57
72. Heusch G, Rose J, Skyschally A, Post H, Schulz R. Calcium responsiveness in regional myocardial short-term hibernation and stunning in the in situ porcine heart. Inotropic responses to postextrasystolic potentiation and intracoronary calcium. *Circulation* 1996; 93: 1556-66

73. Grynkiewicz G, Poenie M, Tsien RY. A new generation of Ca^{2+} indicators with greatly improved fluorescence properties. *J Biol Chem* 1985; 260: 3440-3450
74. Backx PH, Keurs HE. Fluorescent properties of rat cardiac trabeculae microinjected with fura-2 salt. *Am J Physiol* 1993; 264: 1098-110
75. Paradise NF, Schmitter JL, Surmitis JA. Criteria for adequate oxygenation of isometric kitten papillary muscle. *Am J Physiol* 1981; 241: 348-53
76. Kotsanas G, Holroyd SM, Wendt IG, Gibbs CL. Intracellular Ca^{2+} , force and activation heat in rabbit papillary muscle: effects of 2,3-Butanedione monoxime. *Journal of molecular and cellular cardiology*. 1993; 25: 1349-58
77. Curnutte JT, Babior BM. Biological defense mechanism. The effect of bacteria and serum on superoxide production by granulocytes. *J Clin Invest* 1974; 53:1662
78. Green TR, Wu DE, Wirtz MK. The O_2 -generating oxidoreductase of human neutrophils: evidence of an obligatory requirement for calcium and magnesium for expression of catalytic activity. *Biochem Biophys Res Commun* 1983; 110: 973-8
79. Newburger PE, Chovaniec ME, Cohen HJ. Activity and activation of the granulocyte superoxide-generating system. *Blood*. 1980; 55: 85
80. Allen RC, Loose LD. Phagocytic activation of luminol-dependent chemiluminescence in rabbit alveolar and peritoneal macrophages. *Biochem Biophys Res Commun* 1976; 69: 245-52
81. Karmazyn M, Haist JV. Calcium dependent positive inotropic effects of low phorbol ester concentrations in isolated rat hearts. *Cardiovasc Res* 1993; 27: 390-5
82. Heusch G, Ehring T, Schulz R. Characterisation of “hibernating” and “stunned” myocardium with focus on the use of calcium antagonists in “stunned” myocardium. *J Cardiovasc Pharmacol* 1992; 20: 25-33
83. Miller WP, McDonald KS, Moss RL. Onset of reduced Ca^{2+} sensitivity of tension during stunning in porcine myocardium. *J Mol Cell Cardiol* 1996; 28: 689-97
84. Van den Ende R, Batink HD, Pfaffendorf M, et al. Discrepancies between inotropic responses and beta-adrenoceptor characteristics after global ischemia in isolated hearts. *J Cardiovasc Pharmacol* 1991; 18: 679-86
85. Yamamoto J, Ohyanagi M, Morita M, Iwasaki T. Beta-adrenoceptor-G protein-adenylate cyclase complex in rat hearts with ischemic heart failure produced by coronary artery ligation. *J Mol Cell Cardiol* 1994; 26: 617-26

86. Fantini E, Athias P, Courtis M, et al. Oxygen and substrate deprivation on isolated rat cardiac myocytes: temporal relationship between electromechanical and biochemical consequences. *Can J Physiol Pharmacol* 1990; 68: 1148-56