

REFERENCES

- Akiyama T, Yamazaki T. Effects of right and left vagal stimulation on left ventricular acetylcholine levels in the cat. *Acta Physiol Scand* 2001; 172: 11-6.
- Babbs CF, Tacker WA, VanVleet JF, Bourland JD, Geddes LA. Therapeutic indices for transchest defibrillator shocks: effective, damaging, and lethal electrical doses. *Am Heart J* 1980; 99: 734-8.
- Bainton CR, Strichartz GR. Concentration dependence of lidocaine-induced irreversible conduction loss in frog nerve. *Anesthesiology* 1994; 81: 657-67.
- Berg MD, Banville IL, Chapman FW, Walker RG, Gaballa MA, Hilwig RW, et al. Attenuating the defibrillation dosage decreases postresuscitation myocardial dysfunction in a swine model of pediatric ventricular fibrillation. *Pediatr Crit Care Med* 2008; 9: 429-34.
- Berini-Aytes L, Escoda, C. G. Anestesia odontologica: Avances Medico-Dentales, 2000.
- Brack KE, Coote JH, Ng GA. Vagus nerve stimulation protects against ventricular fibrillation independent of muscarinic receptor activation. *Cardiovasc Res* 2011; 91: 437-46.
- Bunch TJ, Hammill SC, White RD. Outcomes after ventricular fibrillation out-of-hospital cardiac arrest: expanding the chain of survival. *Mayo Clin Proc* 2005; 80: 774-82.
- Cevik C, Perez-Verdia A, Nugent K. Implantable cardioverter defibrillators and their role in heart failure progression. *Europace* 2009; 11: 710-5.

- Chapman PD, Sagar KB, Wetherbee JN, Troup PJ. Relationship of left ventricular mass to defibrillation threshold for the implantable defibrillator: a combined clinical and animal study. *Am Heart J* 1987; 114: 274-8.
- Chattipakorn N, Banville I, Gray RA, Ideker RE. Mechanism of ventricular defibrillation for near-defibrillation threshold shocks: a whole-heart optical mapping study in swine. *Circulation* 2001; 104: 1313-9.
- Chattipakorn N, Banville I, Gray RA, Ideker RE. Effects of shock strengths on ventricular defibrillation failure. *Cardiovasc Res* 2004; 61: 39-44.
- Chattipakorn N, Fotuhi PC, Ideker RE. Pacing following shocks stronger than the defibrillation threshold: impact on defibrillation outcome. *J Cardiovasc Electrophysiol* 2000a; 11: 1022-8.
- Chattipakorn N, Fotuhi PC, Ideker RE. Prediction of defibrillation outcome by epicardial activation patterns following shocks near the defibrillation threshold. *J Cardiovasc Electrophysiol* 2000b; 11: 1014-21.
- Chattipakorn N, Fotuhi PC, Zheng X, Ideker RE. Left ventricular apex ablation decreases the upper limit of vulnerability. *Circulation* 2000c; 101: 2458-60.
- Chattipakorn N, Ideker RE. Delayed afterdepolarization inhibitor: a potential pharmacologic intervention to improve defibrillation efficacy. *J Cardiovasc Electrophysiol* 2003; 14: 72-5.
- Chen CJ, Guo GB. External cardioversion in patients with persistent atrial fibrillation: a reappraisal of the effects of electrode pad position and transthoracic impedance on cardioversion success. *Jpn Heart J* 2003; 44: 921-32.
- Cobbe S.M. MADaRAC. Cardiac arrhythmias: Oxford textbook of medicine. Vol Volume 2. Oxford: Oxford University Press., 2010.

- Costache, II, Aprotosoaie AC. Clinical and therapeutic aspects of amiodarone induced thyroid dysfunction. *Rev Med Chir Soc Med Nat Iasi* 2013; 117: 375-9.
- De Ferrari GM, Crijns HJ, Borggrefe M, Milasinovic G, Smid J, Zabel M, et al. Chronic vagus nerve stimulation: a new and promising therapeutic approach for chronic heart failure. *Eur Heart J* 2011; 32: 847-55.
- de Kroon JR, Ijzerman MJ, Chae J, Lankhorst GJ, Zilvold G. Relation between stimulation characteristics and clinical outcome in studies using electrical stimulation to improve motor control of the upper extremity in stroke. *J Rehabil Med* 2005; 37: 65-74.
- Dhein S, van Koppen CJ, Brodde OE. Muscarinic receptors in the mammalian heart. *Pharmacol Res* 2001; 44: 161-82.
- DiFrancesco D, Ducouret P, Robinson RB. Muscarinic modulation of cardiac rate at low acetylcholine concentrations. *Science* 1989; 243: 669-71.
- Doyle DJ, Mark PW. Reflex bradycardia during surgery. *Can J Anaesth* 1990; 37: 219-22.
- Epstein AE, Kay GN, Plumb VJ, Dailey SM, Anderson PG. Gross and microscopic pathological changes associated with nonthoracotomy implantable defibrillator leads. *Circulation* 1998; 98: 1517-24.
- Fairchild KD, Srinivasan V, Moorman JR, Gaykema RP, Goehler LE. Pathogen-induced heart rate changes associated with cholinergic nervous system activation. *Am J Physiol Regul Integr Comp Physiol* 2011; 300: R330-9.
- Ganong WF. Review of Medical Physiology. United States of America: a LANGE medical book, 1995.

- George MS, Sackeim HA, Rush AJ, Marangell LB, Nahas Z, Husain MM, et al. Vagus nerve stimulation: a new tool for brain research and therapy. *Biol Psychiatry* 2000; 47: 287-95.
- Gillespie JS, Mackenna BR. The inhibitory action of the sympathetic nerves on the smooth muscle of the rabbit gut, its reversal by reserpine and restoration by catechol amines and by DOPA. *J Physiol* 1961; 156: 17-34.
- Guyton AC HJ. *Textbook of medical physiology*. . Pennsylvania: W.B. Saunders Company, 2000.
- Ikeda T, Iwase S, Sugiyama Y, Matsukawa T, Mano T, Doi M, et al. Stellate ganglion block is associated with increased tibial nerve muscle sympathetic activity in humans. *Anesthesiology* 1996; 84: 843-50.
- Irnich W. The fundamental law of electrostimulation and its application to defibrillation. *Pacing Clin Electrophysiol* 1990; 13: 1433-47.
- Kanlop N, Thommasorn S, Palee S, Weerateerangkul P, Suwansirikul S, Chattipakorn S, et al. Granulocyte colony-stimulating factor stabilizes cardiac electrophysiology and decreases infarct size during cardiac ischaemic/reperfusion in swine. *Acta Physiol (Oxf)* 2011; 202: 11-20.
- Karzai W, Haberstroh J, Muller W, Priebe HJ. Rapid increase in inspired desflurane concentration does not elicit a hyperdynamic circulatory response in the pig. *Lab Anim* 1997; 31: 279-82.
- Kelly PA, Cannom DS, Garan H, Mirabal GS, Harthorne JW, Hurvitz RJ, et al. The automatic implantable cardioverter-defibrillator: efficacy, complications and survival in patients with malignant ventricular arrhythmias. *J Am Coll Cardiol* 1988; 11: 1278-86.

- Kobrin VI. Parasympathetic control of the spontaneous defibrillation of the heart ventricles in animals of various ages. *Neurosci Behav Physiol* 1991; 21: 149-53.
- Kolman BS, Verrier RL, Lown B. The effect of vagus nerve stimulation upon vulnerability of the canine ventricle: role of sympathetic-parasympathetic interactions. *Circulation* 1975; 52: 578-85.
- Krahl SE, Senanayake SS, Handforth A. Right-sided vagus nerve stimulation reduces generalized seizure severity in rats as effectively as left-sided. *Epilepsy Res* 2003; 56: 1-4.
- Lee F. Defibrillation. *Singapore Med J* 2011; 52: 544-7.
- Li M, Zheng C, Sato T, Kawada T, Sugimachi M, Sunagawa K. Vagal nerve stimulation markedly improves long-term survival after chronic heart failure in rats. *Circulation* 2004; 109: 120-4.
- Marenco JP, Wang PJ, Link MS, Homoud MK, Estes NA, 3rd. Improving survival from sudden cardiac arrest: the role of the automated external defibrillator. *JAMA* 2001; 285: 1193-200.
- McLure HA, Rubin AP. Review of local anaesthetic agents. *Minerva Anestesiol* 2005; 71: 59-74.
- McRae AT, 3rd, Chung MK, Asher CR. Arrhythmogenic right ventricular cardiomyopathy: a cause of sudden death in young people. *Cleve Clin J Med* 2001; 68: 459-67.
- Morillo CA, Jones DL, Klein GJ. Effects of autonomic manipulation on ventricular fibrillation and internal cardiac defibrillation thresholds in pigs. *Pacing Clin Electrophysiol* 1996; 19: 1355-62.

Mouchawar GA, Wolsleger WK, Doan PD, Causey JD, 3rd, Kroll MW. Does an SVC electrode further reduce DFT in a hot-can ICD system? *Pacing Clin Electrophysiol* 1997; 20: 163-7.

Murakawa Y, Yamashita T, Ajiki K, Hayami N, Omata M, Nagai R. Effect of cervical vagal nerve stimulation on defibrillation energy: a possible adjunct to efficient defibrillation. *Jpn Heart J* 2003; 44: 91-100.

Murakawa Y, Yamashita T, Kanese Y, Omata M. Can a class III antiarrhythmic drug improve electrical defibrillation efficacy during ventricular fibrillation? *J Am Coll Cardiol* 1997; 29: 688-92.

Nakagawa Y, Sato Y, Kojima T, Wakabayashi T, Morita S, Amino M, et al. Electrical defibrillation outcome prediction by waveform analysis of ventricular fibrillation in cardiac arrest out of hospital patients. *Tokai J Exp Clin Med* 2012; 37: 1-5.

Neuzner J, Schwarz T, Strasser R, Schlepper M, Pitschner H. Effect of the addition of an abdominal hot can cardioverter/defibrillator pulse generator on the defibrillation energy requirements in a single-lead endocardial defibrillation system. *Eur Heart J* 1997; 18: 1655-8.

Olshansky B, Sabbah HN, Hauptman PJ, Colucci WS. Parasympathetic nervous system and heart failure: pathophysiology and potential implications for therapy. *Circulation* 2008; 118: 863-71.

Panescu D. Vagus nerve stimulation for the treatment of depression. *IEEE Eng Med Biol Mag* 2005; 24: 68-72.

Patel C, Yan GX, Kocovic D, Kowey PR. Should catheter ablation be the preferred therapy for reducing ICD shocks?: Ventricular tachycardia ablation versus

- drugs for preventing ICD shocks: role of adjuvant antiarrhythmic drug therapy. *Circ Arrhythm Electrophysiol* 2009; 2: 705-11; discussion 712.
- Pawlowski J, Orr K, Kim KM, Pappas AL, Sukhani R, Jellish WS. Anesthetic and recovery profiles of lidocaine versus mepivacaine for spinal anesthesia in patients undergoing outpatient orthopedic arthroscopic procedures. *J Clin Anesth* 2012; 24: 109-15.
- Perez-de-Sa V, Roscher R, Cunha-Goncalves D, Larsson A, Werner O. Mild hypothermia has minimal effects on the tolerance to severe progressive normovolemic anemia in Swine. *Anesthesiology* 2002; 97: 1189-97.
- Peterchev AV, Rosa MA, Deng ZD, Prudic J, Lisanby SH. Electroconvulsive therapy stimulus parameters: rethinking dosage. *J ECT* 2010; 26: 159-74.
- Porth C. *Pathophysiology Concepts of Altered Health States*, 7th edition. Philadelphia: Lippincott Williams & Wilkins 2005.
- Porto GG, Vasconcelos BC, Gomes AC, Albert D. Evaluation of lidocaine and mepivacaine for inferior third molar surgery. *Med Oral Patol Oral Cir Bucal* 2007; 12: E60-4.
- Qi XQ, Newman D, Dorian P. Azimilide decreases defibrillation voltage requirements and increases spatial organization during ventricular fibrillation. *J Interv Card Electrophysiol* 1999; 3: 61-7.
- Rizzo P, Beelke M, De Carli F, Canovaro P, Nobili L, Robert A, et al. Chronic vagus nerve stimulation improves alertness and reduces rapid eye movement sleep in patients affected by refractory epilepsy. *Sleep* 2003; 26: 607-11.
- Sabbah HN, Ilsar I, Zaretsky A, Rastogi S, Wang M, Gupta RC. Vagus nerve stimulation in experimental heart failure. *Heart Fail Rev* 2011; 16: 171-8.

- Shinlapawittayatorn K, Chinda K, Palee S, Surinkaew S, Thunsiri K, Weerateerangkul P, et al. Low-amplitude, left vagus nerve stimulation significantly attenuates ventricular dysfunction and infarct size through prevention of mitochondrial dysfunction during acute ischemia-reperfusion injury. *Heart Rhythm* 2013; 10: 1700-7.
- Shinlapawittayatorn K, Sungnoon R, Chattipakorn S, Chattipakorn N. Effects of sildenafil citrate on defibrillation efficacy. *J Cardiovasc Electrophysiol* 2006; 17: 292-5.
- Spray DC, Burt JM. Structure-activity relations of the cardiac gap junction channel. *Am J Physiol* 1990; 258: C195-205.
- Strobel JS, Kenknight BH, Rollins DL, Smith WM, Ideker RE. The effects of ventricular fibrillation duration and site of initiation on the defibrillation threshold during early ventricular fibrillation. *J Am Coll Cardiol* 1998; 32: 521-7.
- Stubhan M, Markert M, Mayer K, Trautmann T, Klumpp A, Henke J, et al. Evaluation of cardiovascular and ECG parameters in the normal, freely moving Gottingen Minipig. *J Pharmacol Toxicol Methods* 2008; 57: 202-11.
- Takenami T, Yagishita S, Nara Y, Hoka S. Intrathecal mepivacaine and prilocaine are less neurotoxic than lidocaine in a rat intrathecal model. *Reg Anesth Pain Med* 2004; 29: 446-53.
- ten Tusscher KH, Mourad A, Nash MP, Clayton RH, Bradley CP, Paterson DJ, et al. Organization of ventricular fibrillation in the human heart: experiments and models. *Exp Physiol* 2009; 94: 553-62.

Thomas R. Van De Water HS. Otolaryngology: Basic Science and Clinical Review.

New York, USA: Thieme Medical Publishers, Inc., 2006.

Tsagalou EP, Anastasiou-Nana MI, Charitos CE, Siafakas CX, Drakos SG, Ntalianis

A, et al. Time course of fibrillation and defibrillation thresholds after an intravenous bolus of amiodarone--an experimental study. *Resuscitation* 2004; 61: 83-9.

Tsuboi M, Furukawa Y, Nakajima K, Kurogouchi F, Chiba S. Inotropic, chronotropic, and dromotropic effects mediated via parasympathetic ganglia in the dog heart. *Am J Physiol Heart Circ Physiol* 2000; 279: H1201-7.

Ulphani JS, Cain JH, Inderyas F, Gordon D, Gikas PV, Shade G, et al. Quantitative analysis of parasympathetic innervation of the porcine heart. *Heart Rhythm* 2010; 7: 1113-9.

Valentinuzzi ME, del Valle Ruiz E, da Costa CP. Ventricular fibrillation threshold in the three-toed sloth (*Bradypus tridactylus*). *Acta Physiol Pharmacol Latinoam* 1984; 34: 313-22.

Wagner GS. MARRIOTT'S Practical Electrocardiography. Philadelphia, USA: LIPPINCOTT WILLIAMS & WILKINS, 2000.

Wang M, Dorian P, Ogilvie RI. Isoproterenol increases defibrillation energy requirements in dogs. *J Cardiovasc Pharmacol* 1992; 19: 201-8.

WHO. The top 10 causes of death. [Online] Available <http://www.who.int/mediacentre/factsheets/fs310/en/index.html> (10 September 2011) 2011.

- Yamanouchi Y, Efimov IR, Mowrey KA, Mazgalev TN, Wilkoff BL, Tchou PJ. Biventricular shocking leads improve defibrillation efficacy. *J Cardiovasc Electrophysiol* 1999; 10: 561-5.
- Zhang Y, Mazgalev TN. Arrhythmias and vagus nerve stimulation. *Heart Fail Rev* 2011; 16: 147-61.
- Zhang Y, Popovic ZB, Bibebski S, Fakhry I, Sica DA, Van Wagoner DR, et al. Chronic vagus nerve stimulation improves autonomic control and attenuates systemic inflammation and heart failure progression in a canine high-rate pacing model. *Circ Heart Fail* 2009; 2: 692-9.
- Zheng C, Kawada T, Li M, Sato T, Sunagawa K, Sugimachi M. Reversible vagal blockade in conscious rats using a targeted delivery device. *J Neurosci Methods* 2006; 156: 71-5.