

Chronological references of Brugada Syndrome Patients with inferolateral J-wave syndromes or Early Repolarization Pattern (from recent to old publications: 2021 to 1920)

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- 1) Madias JE. On the nonpathological nature of ST-segment elevation in lateral leads in patients with CRBBB. Pacing Clin Electrophysiol. **2021 Feb** 10. doi: 10.1111/pace.14193
- 2) Liu Qifang 1, Huang Jing 1, Zhao Yidong 1, Yang Long 1Ablation of premature ventricular contraction triggering ventricular fibrillation in a patient with early repolarization syndrome. Ann Noninvasive Electrocardiol. **2021 Jan;26**(1):e12792. doi: 10.1111/anec.12792.
- 3) Yu-Dong Fei 1, Mu Chen 1, Shuai Guo 2, Akira Ueoka 3, Zhenhui Chen 2, Michael Rubart-von der Lohe 4, Thomas H Everett 4th 2, Zhilin Qu 5, James N Weiss 5, Peng-Sheng Chen 6. Simultaneous activation of the small conductance calcium-activated potassium current by acetylcholine and inhibition of sodium current by ajmaline cause J-wave syndrome in Langendorff-perfused rabbit ventricles. Heart Rhythm. **2021 Jan;18**(1):98-108. doi: 10.1016/j.hrthm.2020.07.036.
- 4) Philipp Bohm 1, Jürgen Scharhag 2, Florian Egger 3, Karl-Heinz Tischer 4, David Niederseer 5, Christian Schmied 5, Tim Meyer 3. Sports-Related Sudden Cardiac Arrest in Germany. Can J Cardiol. **2021 Jan;** 37(1):105-112. doi: 10.1016/j.cjca.2020.03.021
- 5) Yu-Dong Fei 1, Mu Chen 1, Shuai Guo 2, Akira Ueoka 3, Zhenhui Chen 2, Michael Rubart-von der Lohe 4, Thomas H Everett 4th 2, Zhilin Qu 5, James N Weiss 5, Peng-Sheng Chen 6. Simultaneous activation of

the small conductance calcium-activated potassium current by acetylcholine and inhibition of sodium current by ajmaline cause J-wave syndrome in Langendorff-perfused rabbit ventricles. Heart Rhythm. **2021 Jan;18**(1):98-108. doi: 10.1016/j.hrthm.2020.07.036.

6) Edward J Vigmond 1 2, Julien Bouyssier 1 2, Jason Bayer 1 2, Michel Haïssaguerre 1 3 4, Hiroshi Ashikaga 1 5 On the nature of delays allowing anatomical re-entry involving the Purkinje network: a simulation study. Europace. **2021 Jan 19**; euaa395. doi: 10.1093/europace/euaa395.

7) Mu Chen 1, Yudong Fei 1, Tai-Zhong Chen 1, Yi-Gang Li 1, Peng-Sheng Chen 2. The regulation of the small-conductance calcium-activated potassium current and the mechanisms of sex dimorphism in J wave syndrome. Pflugers Arch. **2021 Jan 7**. doi: 10.1007/s00424-020-02500-3.

8) Makoto Komatsuzaki 1, Toshifumi Takasusuki, Yoshiyuki Kimura, Shigeki Yamaguchi. Assessment of the ECG T-Wave in Patients With Subarachnoid Hemorrhage. J Neurosurg Anesthesiol. **2021 Jan;33**(1): 58-64. doi: 10.1097/ANA.0000000000000624

9) José M Di Diego 1, Bence Patocskai 2, Hector Barajas-Martinez 1, Virág Borbáth 3, Michael J Ackerman 4, Alexander Burashnikov 1 5, Jérôme Clatot 1, Gui-Rong Li 6, Victoria M Robinson 1 7, Dan Hu 8, Charles Antzelevitch 1 5 9. Acacetin suppresses the electrocardiographic and arrhythmic manifestations of the J wave syndromes. PLoS One. **2020 Nov 24**;15(11):e0242747. doi: 10.1371/journal.pone.0242747.

10) Hiroyuki Ikeda 1, Kanae Hasegawa, Hiroyasu Uzui, Yoshitomo Fukuoka, Yuichiro Shiomi, Naoto Tama, Shinsuke Miyazaki, Kentaro Ishida, Hiroshi Tada. Early repolarization in the inferolateral leads predicts the presence of vasospastic angina: a novel predictor in patients with resting angina, Coron Artery Dis. **2020 Nov 13**. doi: 10.1097/MCA.0000000000000983.

11) Tamoor Ahmed 1, Talha Ahmed 2, Reyaz Haque 3Rare ST-Elevation Myocardial Infarction Mimic: Diabetic Ketoacidosis With Severe Hypercalcemia. Cureus. **2020 Jul 4**;12(7):e9001. doi: 10.7759/cureus.9001.

12) Michel Haïssaguerre 1, Josselin Duchateau 2, Remi Dubois 2, Mélèze Hocini 2, Ghassen Cheniti 2, Frederic Sacher 2, Thomas Lavergne 2, Vincent Probst 3, Elodie Surget 2, Ed Vigmond 2, Nicolas Welte 2, Remi Chauvel 2, Nicolas Derval 2, Thomas Pambrun 2, Pierre Jais 2, Wee Nademanee 4, Olivier Bernus 5 Idiopathic Ventricular Fibrillation: Role of Purkinje System and Microstructural Myocardial Abnormalities JACC Clin Electrophysiol. **2020 Jun;6**(6):591-608. doi: 10.1016/j.jacep.2020.03.010.

- 13)** Carmelo Buttà 1, Luca Zappia 1, Giulia Laterra 1, Marco Roberto 2 Diagnostic and prognostic role of electrocardiogram in acute myocarditis: A comprehensive review. *Ann Noninvasive Electrocardiol.* **2020 May**; 25(3). doi: 10.1111/anec.12726.
- 14)** Tsukasa Kamakura 1, Tetsuji Shinohara 2, Kenji Yodogawa 3, Nobuyuki Murakoshi 4, Hiroshi Morita 5, Naohiko Takahashi 2, Yasuya Inden 6, Wataru Shimizu 3, Akihiko Nogami 4, Minoru Horie 7, Takeshi Aiba 1, Kengo Kusano 8. Long-term prognosis of patients with J-wave syndrome. *Heart.* **2020 Feb**;106(4):299-306. doi: 10.1136/heartjnl-2019-315007
- 15)** Michel Haïssaguerre 1, Wee Nademanee 2, Mélèze Hocini 3, Josselin Duchateau 4, Clementine André 4, Thomas Lavergne 5, Masa Takigawa 6, Frederic Sacher 4, Nicolas Derval 4, Thomas Pambrun 4, Pierre Jais 4, Rick Walton 5, Mark Potse 5, Ed Vigmond 5, Remi Dubois 5, Olivier Bernus 7. The Spectrum of Idiopathic Ventricular Fibrillation and J-Wave Syndromes: Novel Mapping Insights. *Card Electrophysiol Clin.* **2019 Dec**; 11(4):699-709. doi: 10.1016/j.ccep.2019.08.011. <https://pubmed.ncbi.nlm.nih.gov/30301669/>
- 16)** Abdul Aziz A Asbeutah 1 2, Majed H Salem 2Electrographic Osborn wave in severe hypercalcaemia. *Eur Heart J Case Rep.* **2019 Oct 26**;3(4): 1-2. doi: 10.1093/ehjcr/ytz174
- 17)** Yumi Munetsugu 1, Mitsuharu Kawamura 1, Toshihiko Gokan 1, Ko Ogawa 1, Yuya Nakamura 1, Akinori Ochi 1, Koichiro Inokuchi 1, Hiroyuki Ito 1, Tatsuya Onuki 1, Youichi Kobayashi 1, Toshiro Shinke 1J-Wave Elevation in the Inferior Leads Predicts Lethal Ventricular Arrhythmia Initiated by Premature Ventricular Contractions With Right Bundle Branch Block and Superior Axis. *Circ J.* **2019 Aug** 23;83(9): 1851-1859. doi: 10.1253/circj.CJ-19-0021
- 18)** Tomofumi Nakamura 1, Benjamin Schaeffer 2, Shinichi Tanigawa 2, Rahul G Muthalaly 2, Roy M John 3, Gregory F Michaud 3, Usha B Tedrow 2, William G Stevenson 4. Catheter ablation of polymorphic ventricular tachycardia/fibrillation in patients with and without structural heart disease. *Heart Rhythm.* **2019 Jul**;16(7):1021-1027. doi: 10.1016/j.hrthm.2019.01.032..
- 19)** Hatice Topçu 1, Gökhan Aksan 2, Banu Karakuş Yılmaz 1, Mehmet Tezcan 2, Serhat Sığırıcı 2 Osborn wave and new-onset atrial fibrillation related to hypothermia after synthetic cannabis (bonsai) abuse. *Turk Kardiyol Dern Ars.* **2019 Jun**;47(4):315-318. doi: 10.5543/tkda.2018.30513

- 20)** Haissaguerre, M., Nademanee, K., Hocini, M., Cheniti, G., Duchateau, J., Frontera, A., ... Bernus, O. (**May 01 2019**). Depolarization versus repolarization abnormality underlying inferolateral J wave syndromes - new concepts in sudden cardiac death with apparently normal hearts. *Heart Rhythm: The Official Journal of the Heart Rhythm Society*, 16, 781-790. <https://doi.org/10.1016/j.hrthm.2018.10.040>
- 21)** Cheng-I Wu 1, Shih-Lin Chang 2, Chin-Yu Lin 3, Jennifer Jeanne B Vicera 3, Yenn-Jiang Lin 1, Li-Wei Lo 1, Fa-Po Chung 1, Yu-Feng Hu 1, Ting-Yung Chang 3, Tze-Fan Chao 4, Jo-Nan Liao 1, Ta-Chuan Tuan 1, Chih-Min Liu 3, Abigail Louise D Te 3, Shih-Ann Chen 1Clinical significance of J wave in prediction of ventricular arrhythmia in patients with acute myocardial infarction. *J Cardiol.* **2019 May**;73(5):351-357. doi: 10.1016/j.jcc.2018.11.005.
- 22)** Eiichiro Oka 1, Yu-Ki Iwasaki 1, Yujin Maru 1, Yuhi Fujimoto 1, Kanako Hagiwara 1, Hiroshi Hayashi 1, Teppei Yamamoto 1, Kenji Yodogawa 1, Meiso Hayashi 1, Wataru Shimizu 1 Prevalence and Significance of an Early Repolarization Electrocardiographic Pattern and Its Mechanistic Insight Based on Cardiac Magnetic Resonance Imaging in Patients With Acute Myocarditis. *Circ Arrhythm Electrophysiol.* 2019 Mar;12(3):e006969. doi: 10.1161/CIRCEP.118.006969.
- 23)** Robert D Anderson 1, Saurabh Kumar 2, Jonathan M Kalman 3, Prashanthan Sanders 4, Frederic Sacher 5, Meleze Hocini 5, Pierre Jais 5, Michel Haïsaguerre 5, Geoffrey Lee 1. Catheter Ablation of Ventricular Fibrillation. *Heart Lung Circ.* **2019 Jan**;28(1):110-122. doi: 10.1016/j.hlc.2018.09.005.
- 24)** Bourier F, Denis A, Cheniti G, Lam A, Vlachos K, Takigawa M, Kitamura T, Frontera A, Duchateau J, Pambrun T, Klotz N, Derval N, Sacher F, Jais P, Haissaguerre M, Hocini M. Early Repolarization Syndrome: Diagnostic and Therapeutic Approach. *Front Cardiovasc Med.* **2018 Nov** 27;5:169. doi: 10.3389/fcvm.2018.00169.
- 25)** Giuseppe Di Stolfo 1, Pietro Palumbo 2, Stefano Castellana 3, Sandra Mastroianno 1, Tommaso Biagini 3, Orazio Palumbo 2, Maria Pia Leone 4, Giovanni De Luca 1, Domenico Rosario Potenza 1, Tommaso Mazza 3, Aldo A Russo 1, Massimo Carella 5 Sudden cardiac death in J wave syndrome with short QT associated to a novel mutation in Na v 1.8 coding gene SCN10A: First case report for a possible pharmacogenomic role. *J Electrocardiol.* **Sep-Oct 2018**;51(5):809-813. doi: 10.1016/j.jelectrocard.2018.06.005.

- 26)** Lauri T A Holmström 1, Mira A Haukilahti 1, Jani T Tikkanen 1, Aapo L Aro 2, Tuomas V Kenttä 1, Marja-Leena Kortelainen 3, Heikki V Huikuri 1, Matti J Junntila 1Inferolateral early repolarization among non-ischemic sudden cardiac death victims. *Europace*. **2018 Jun** 1;20(FI1):f93-f98. doi: 10.1093/europace/eux122.
- 27)** Silvia G Priori 1, Carlo Napolitano 2 J-Wave Syndromes: Electrocardiographic and Clinical Aspects Card Electrophysiol Clin. **2018 Jun**;10(2):355-369. doi: 10.1016/j.ccep.2018.02.009.
- 28)** Fin Biering-Sørensen 1, Tor Biering-Sørensen 2, Nan Liu 3, Lasse Malmqvist 4, Jill Maria Wecht 5, Andrei Krassioukov 6Alterations in cardiac autonomic control in spinal cord injury.Auton Neurosci, **2018 Jan**;209:4-18. doi: 10.1016/j.autneu.2017.02.004
- 29)** Georgopoulos S, Letsas KP, Liu T, Kalafateli M, Korantzopoulos P, Burkle G, Vlachos K, Giannopoulos G, Efremidis M, Deftereos S, Sideris A, Takagi M, Yan GX, Ehrlich JR. A meta-analysis on the prognostic significance of inferolateral early repolarization pattern in Brugada syndrome. *Europace*. **2018 Jan** 1;20(1):134-139. doi: 10.1093/europace/euw394.
- 30)** Kevin M W Leong 1 2, Fu Siong Ng 1 2, Caroline Roney 1, Christopher Cantwell 1, Matthew J Shun-Shin 1, Nicholas W F Linton 1, Zachary I Whinnett 1 2, David C Lefroy 2, D Wyn Davies 2, Sian E Harding 1, Phang Boon Lim 1 2, Darrel Francis 1, Nicholas S Peters 1 2, Amanda M Varnava 2, Prapa Kanagaratnam 1 2Repolarization abnormalities unmasked with exercise in sudden cardiac death survivors with structurally normal hearts. *J Cardiovasc Electrophysiol*, **2018 Jan**; 29(1):115-126. doi: 10.1111/jce.13375.
- 31)** W Amara 1, S A Bouallouche 2, A Rezoug 3, A El Hraiech 4, A Iusuf 5, N Hammoudi 3 Ann Cardiol Angeiol (Paris). **2017 Nov**;66(5):249-254. doi: 10.1016/j.ancard.2017.09.005. DOI: 10.1016/j.ancard.2017.09.005
- 32)** Beatriz Trenor 1, Karen Cardona 1, Javier Saiz 1, Denis Noble 2, Wayne Giles 3, Cardiac action potential repolarization revisited: early repolarization shows all-or-none behaviour, *Physiol*. **2017 Nov** 1;595(21): 6599-6612. doi: 10.1113/JP273651. Free
- 33)** Mazzanti A, Underwood K, Nevelev D, et al. The new kids on the block of arrhythmogenic disorders: short QT syndrome and early repolarization. *J Cardiovasc Electrophysiol* . **2017 Oct**;28(10):1226-1236. doi: 10.1111/jce.13265..
- 34)** Najim Lahrouchi 1, Hariharan Raju 2, Elisabeth M Lodder 1, Efstathios Papatheodorou 2, James S Ware 3, Michael Papadakis 2, Rafik Tadros 4, Della Cole 2, Jonathan R Skinner 5, Jackie Crawford 5, Donald

R Love 5, Chee J Pua 6, Bee Y Soh 6, Jaydutt D Bhalshankar 6, Risha Govind 3, Jacob Tfelt-Hansen 7, Bo G Winkel 7, Christian van der Werf 1, Yanushi D Wijeyeratne 2, Greg Mellor 2, Jan Till 8, Marta C Cohen 9, Maria Tome-Esteban 2, Sanjay Sharma 2, Arthur A M Wilde 10, Stuart A Cook 11, Connie R Bezzina 1, Mary N Sheppard 2, Elijah R Behr 12. Utility of Post-Mortem Genetic Testing in Cases of Sudden Arrhythmic Death Syndrome. *J Am Coll Cardiol.* 2017 May 2;69(17):2134-2145. doi: 10.1016/j.jacc.2017.02.046Anna McCorquodale 1, Rachel Poulton 1, Jennifer Hendry 1, Gabrielle Norrish 1, Ella Field 1, Sarah Mead-Regan 1, Martin Lowe 1, Juan Pablo Kaski 1 2High prevalence of early repolarization in the paediatric relatives of sudden arrhythmic death syndrome victims and in normal controls. *Europace.* **2017 Aug** 1;19(8): 1385-1391. doi: 10.1093/europace/euw248.

35) Jonathan A Drezner 1, Sanjay Sharma 2, Aaron Baggish 3, Michael Papadakis 2, Mathew G Wilson 4, Jordan M Prutkin 5, Andre La Gerche 6, Michael J Ackerman 7 8 9 10 11, Mats Borjesson 12 13, Jack C Salerno 14, Irfan M Asif 15, David S Owens 5, Eugene H Chung 16, Michael S Emery 17, Victor F Froelicher 18, Hein Heidbuchel 19, Carmen Adamuz 4, Chad A Asplund 20, Gordon Cohen 21 22, Kimberly G Harmon 1, Joseph C Marek 23, Silvana Molossi 24 25, Josef Niebauer 26, Hank F Pelto 1, Marco V Perez 27, Nathan R Riding 4, Tess Saarel 28 29, Christian M Schmied 30, David M Shipon 31, Ricardo Stein 32, Victoria L Vetter 33, Antonio Pelliccia 34, Domenico Corrado 35 36 37. International criteria for electrocardiographic interpretation in athletes: Consensus statement. *Br J Sports Med.* **2017 May**;51(9):704-731. doi: 10.1136/bjsports-2016-097331.

36) Antzelevitch C, Yan GX, Ackerman MJ, Borggrefe M, Corrado D, Guo J, Gussak I, Hasdemir C, Horie M, Huikuri H, Ma C, Morita H, Nam GB, Sacher F, Shimizu W, Viskin S, Wilde AAM. J-Wave syndromes expert consensus conference report: Emerging concepts and gaps in knowledge. *Europace.* **2017 Apr** 1;19(4):665-694. doi: 10.1093/europace/euw235.

37) Alexander B, Britton S, Barbosa-Barros R, Pérez-Riera AR, de Mourão Matos IC, Guzik P, Baranchuk A. Massive J-waves in the context of intracranial hemorrhage. *J Electrocardiol.* **2017 Jan-Feb**;50(1):142-143. doi: 10.1016/j.jelectrocard.2016.09.010

38) Charles Antzelevitch 1, Gan-Xin Yan 2, Michael J Ackerman 3, Martin Borggrefe 4, Domenico Corrado 5, Jihong Guo 6, Ihor Gussak 7, Can Hasdemir 8, Minoru Horie 9, Heikki Huikuri 10, Changsheng Ma 11, Hiroshi Morita 12, Gi-Byoung Nam 13, Frederic Sacher 14, Wataru

Shimizu 15, Sami Viskin 16, Arthur A M Wilde 17 J-Wave syndromes expert consensus conference report: Emerging concepts and gaps in knowledge. Heart Rhythm. **2016 Oct**;13(10):e295-324. doi: 10.1016/j.hrthm.2016.05.024

39) Charles Antzelevitch 1, Gan-Xin Yan 2, Michael J Ackerman 3, Martin Borggrefe 4, Domenico Corrado 5, Jihong Guo 6, Ihor Gussak 7, Can Hasdemir 8, Minoru Horie 9, Heikki Huikuri 10, Changsheng Ma 11, Hiroshi Morita 12, Gi-Byoung Nam 13, Frederic Sacher 14, Wataru Shimizu 15, Sami Viskin 16, Arthur A M Wilde 17. J-Wave syndromes expert consensus conference report: Emerging concepts and gaps in knowledge J Arrhythm. 2016 Oct;32(5):315-339. doi: 10.1016/j.joa.2016.07.002

40) Bence Patocskai 1, Hector Barajas-Martinez 2, Dan Hu 2, Zsolt Gurabi 1, István Koncz 1, Charles Antzelevitch 3 Cellular and ionic mechanisms underlying the effects of cilostazol, milrinone, and isoproterenol to suppress arrhythmogenesis in an experimental model of early repolarization syndrome Heart Rhythm. **2016 Jun**;13(6):1326-34. doi: 10.1016/j.hrthm.2016.01.024.

41) Tong Liu, MD,¹ Jifeng Zheng, MD,² and Gan-Xin Yan, J Wave Syndromes: History and Current Controversies Korean Circ J. **2016 Sep**; 46(5): 601–609.doi: 10.4070/kcj.2016.46.5.601 Free

42) Patton KK, Ellinor PT, Ezekowitz M, et al. Electrocardiographic Early Repolarization: A Scientific Statement from the American Heart Association. Circulation. **2016 Apr 12**;133(15):1520-9. doi: 10.1161/CIR.000000000000388. Epub 2016

43) Yvonne Cristoforetti 1, Luigi Biasco 2, Carla Giustetto 1, Ole De Backer 3, Davide Castagno 1, Piero Astegiano 4, Gianpasquale Ganzit 4, Carlo Gabriele Gribaudo 4, Marco Moccetti 5, Fiorenzo Gaita 1J-wave duration and slope as potential tools to discriminate between benign and malignant early repolarizationHeart Rhythm. **2016 Mar**;13(3):806-11. doi: 10.1016/j.hrthm.2015.11.029.

44) Antonio Sagone Electrical Storm: Incidence, Prognosis and Therapy. J Atr Fibrillation. **2015 Dec 31**;8(4):1150. doi: 10.4022/jafib.1150.

45) Adam Orville Strand 1, Thein Tun Aung 2, Ajay Agarwal 3Not all ST-segment changes are myocardial injury: hypercalcaemia-induced ST-segment elevation. BMJ Case Rep. **2015 Oct 13**;2015: bcr2015211214. doi: 10.1136/bcr-2015-211214.

46) Philip Aagaard 1, Julia Sydow 2, Mats Börjesson 3, Lennart Bergfeldt 4, Frieder Braunschweig 5. Early repolarization in ECG. Definition,

prevalence and prognostic significance. Lakartidningen. **2015 Oct 20**;112: DLUT

47) Charles Antzelevitch 1, Gan-Xin Yan 2 J-wave syndromes: Brugada and early repolarization syndromes. J-wave syndromes: Brugada and early repolarization syndromes. Heart Rhythm. **2015 Aug**;12(8):1852-66. doi: 10.1016/j.hrthm.2015.04.014.

48) Macfarlane PW, Antzelevitch C, Haissaguerre M, Huikuri HV, Potse M, Rosso R, Sacher F, Tikkannen JT, Wellens H, Yan GX. The Early Repolarization Pattern: A Consensus Paper. J Am Coll Cardiol. **2015 Jul 28**;66(4):470-7. doi: 10.1016/j.jacc.2015.05.033.

49) J T Tikkannen 1, H V Huikuri 2 Characteristics of "malignant" vs. "benign" electrocardiographic patterns of early repolarization. J Electrocardiol. **May-Jun 2015**;48(3):390-4. doi: 10.1016/j.jelectrocard.2014.12.020.

50) Chiho Ota 1, Sin-nosuke Shiono 1, Yuji Fujino 1, Takahiko Kamibayashi 1, Yukio Hayashi 2 Prevalence and Prognostic Value of Early Repolarization in Low Risk Surgical Patients. Biomed Res Int. **2015**; 2015:309260. doi: 10.1155/2015/309260.

51) Ricard Serra-Grima 1, Maite Doñate 1, Jesús Álvarez-García 2, Ana Barradas-Pires 1, Andreu Ferrero 3, Lidia Carballeira 1, Teresa Puig 3, Enrique Rodríguez 1, Juan Cinca 1 Long-term follow-up of early repolarization pattern in elite athletes. Am J Med. **2015 Feb**;128(2): 192.e1-9. doi: 10.1016/j.amjmed.2014.06.017

52) Kamal K Sethi 1, Kabir Sethi 1, Surendra K Chutani 1. J Wave Syndrome: Clinical Diagnosis, Risk Stratification and Treatment, J Atr Fibrillation. **2014 Dec 31**;7(4):1173. doi: 10.4022/jafib.1173.

53) Filippo M Quattrini 1, Antonio Pelliccia 2, Riccardo Assorgi 1, Fernando M DiPaolo 1, Maria Rosaria Squeo 1, Franco Culasso 3, Vincenzo Castelli 4, Mark S Link 5, Barry J Maron 6. Benign clinical significance of J-wave pattern (early repolarization) in highly trained athletes. Heart Rhythm. **2014 Nov**;11(11):1974-82. doi: 10.1016/j.hrthm.2014.07.04

54) Mazzanti A, Kanthan A, Monteforte N, Memmi M, Bloise R, Novelli V, Miceli C, O'Rourke S, Borio G, Zienciu-Krajka A, Curcio A, Surducan AE, Colombo M, Napolitano C and Priori SG. Novel insight into the natural history of short QT syndrome. J Am Coll Cardiol. **2014 Apr 8**;63(13):1300-1308. doi: 10.1016/j.jacc.2013.09.078.

55) István Koncz 1, Zsolt Gurabi 1, Bence Patocskai 1, Brian K Panama 2, Tamás Szél 1, Dan Hu 2, Hector Barajas-Martínez 2, Charles Antzelevitch 3 Mechanisms underlying the development of the electrocardiographic and

arrhythmic manifestations of early repolarization syndrome. *J Mol Cell Cardiol.* **2014 Mar**; 68:20-8. doi: 10.1016/j.yjmcc.2013.12.012.

56) Masato Shimizu 1, Mitsuhiro Nishizaki, Noriyoshi Yamawake, Hiroyuki Fujii, Harumizu Sakurada, Mitsuaki Isobe, Masayasu Hiraoka. J wave and fragmented QRS formation during the hyperacute phase in Takotsubo cardiomyopathy. *Circ J.* **2014;**78(4):943-9. doi: 10.1253/circj.cj-13-1296.

57) Akinori Sato 1, Hiroshi Watanabe 2, Keiko Sonoda 2, Masaomi Chinushi 3, Takashi Tsuda 4, Daisuke Izumi 2, Hiroshi Furushima 2, Tohru Minamino 2 Augmentation of the J wave by rapid pacing in a patient with vasospastic angina *Int J Cardiol.* **2014;**172(1):e111-3. doi: 10.1016/j.ijcard.2013.12.121

58) Carlo De Asmundis, Giulio Conte, Moises Levinstein, Gian-Battista Chierchia, Juan Sieira, Giacomo Di Giovanni, Giannis Baltogiannis, Michael Hoe Kwung Park, Andrea Sarkozy, Pedro Brugada. Prevalence and electrocardiographic characteristics of early repolarization pattern in young teen athletes. *Acta Cardiol.* **2014 Feb;**69(1):3-6. doi: 10.1080/ac.69.1.3011338.

59) Zsolt Gurabi 1, István Koncz, Bence Patocskai, Vladislav V Nesterenko, Charles Antzelevitch. Cellular mechanism underlying hypothermia-induced ventricular tachycardia/ventricular fibrillation in the setting of early repolarization and the protective effect of quinidine, cilostazol, and milrinone. *2014 Feb;*7(1):134-42. doi: 10.1161/CIRCEP.113.000919.

60) Silvia G Priori 1, Arthur A Wilde, Minoru Horie, Yongkeun Cho, Elijah R Behr, Charles Berul, Nico Blom, Josep Brugada, Chern-En Chiang, Heikki Huikuri, Prince Kannankeril, Andrew Krahm, Antoine Leenhardt, Arthur Moss, Peter J Schwartz, Wataru Shimizu, Gordon Tomaselli, Cynthia Tracy. HRS/EHRA/APHRS expert consensus statement on the diagnosis and management of patients with inherited primary arrhythmia syndromes: document endorsed by HRS, EHRA, and APHRS in May 2013 and by ACCF, AHA, PACES, and AEPC in June 2013 *Heart Rhythm.* **2013 Dec;**10(12):1932-63. doi: 10.1016/j.hrthm.2013.05.014.

61) Charles Antzelevitch J wave syndromes: molecular and cellular mechanisms; *Electrocardiol.* **Nov-Dec 2013;** 46(6):510-8. doi: 10.1016/j.jelectrocard.2013.08.006.

62) Arnon Adler 1, Raphael Rosso, Dana Viskin, Amir Halkin, Sami Viskin. What do we know about the "malignant form" of early repolarization? *J Am Coll Cardiol.* **2013 Sep** 3;62(10):863-8. doi: 10.1016/j.jacc.2013.05.054.

- 63)** Celina M Yong 1, Marco Perez, Victor Froelicher. Prognostic implications of the J wave ECG patterns. *J Electrocardiol.* **Sep-Oct 2013**;46(5):408-10. doi: 10.1016/j.jelectrocard.2013.06.010.
- 64)** Takashi Hisamatsu 1, Takayoshi Ohkubo, Katsuyuki Miura, Takashi Yamamoto, Akira Fujiyoshi, Naoko Miyagawa, Aya Kadota, Naoyuki Takashima, Shin-ya Nagasawa, Yoshikuni Kita, Yoshitaka Murakami, Akira Okayama, Minoru Horie, Tomonori Okamura, Hirotsugu Ueshima, NIPPON DATA90 Research Group Association between J-point elevation and death from coronary artery disease--15-year follow up of the NIPPON DATA90. *Circ J.* **2013**;77(5):1260-6. doi: 10.1253/circj.cj-12-1273.
- 65)** Jonathan A Drezner 1, Michael John Ackerman, Jeffrey Anderson, Euan Ashley, Chad A Asplund, Aaron L Baggish, Mats Börjesson, Bryan C Cannon, Domenico Corrado, John P DiFiori, Peter Fischbach, Victor Froelicher, Kimberly G Harmon, Hein Heidbuchel, Joseph Marek, David S Owens, Stephen Paul, Antonio Pelliccia, Jordan M Prutkin, Jack C Salerno, Christian M Schmied, Sanjay Sharma, Ricardo Stein, Victoria L Vetter, Mathew G Wilson. Electrocardiographic interpretation in athletes: the 'Seattle criteria' *Br J Sports Med.* **2013 Feb**;47(3):122-4. doi: 10.1136/bjsports-2012-092067.
- 66)** Wu SH, Lin XX, Cheng YJ, Qiang CC, Zhang J. Early repolarization pattern and risk for arrhythmia death: a meta-analysis. *J Am Coll Cardiol.* **2013 Feb** 12;61(6):645-50. doi: 10.1016/j.jacc.2012.11.023.
- 67)** Erik O'Connell 1, Nevin Baker, Gopi Dandamudi, Steven Steinhubl. Dynamic J-Point Elevation Associated with Epileptic Hemiplegia: The Osborn Wave of Todd's Paralysis. *Dynamic J-Point Elevation Associated with Epileptic Hemiplegia: The Osborn Wave of Todd's Paralysis. Case Rep Neurol.* **2013 Jan**;5(1):6-9. doi: 10.1159/000346444.
- 68)** Anne Rollin 1, Philippe Maury, Vanina Bongard, Frédéric Sacher, Marc Delay, Alexandre Duparc, Pierre Mondoly, Didier Carrié, Jean Ferrières, Jean-Bernard Ruidavets. Prevalence, prognosis, and identification of the malignant form of early repolarization pattern in a population-based study Comparative Study *Am J Cardiol.* **2012 Nov** 1;110(9):1302-8. doi: 10.1016/j.amjcard.2012.06.033.
- 69)** Stavrakis S, Patel N, Te C, Golwala H, George A, Lozano P, Lazzara R. Development and validation of a prognostic index for risk stratification of patients with early repolarization. *Ann Noninvasive Electrocardiol.* **2012 Oct**;17(4):361-71. doi: 10.1111/j.1542-474X.2012.00533.x.

- 70)** Andrew D Krahn 1, Jeffrey S Healey, Vijay S Chauhan, David H Birnie, Jean Champagne, Shubhayan Sanatani, Kamran Ahmad, Emily Ballantyne, Brenda Gerull, Raymond Yee, Allan C Skanes, Lorne J Gula, Peter Leong-Sit, George J Klein, Michael H Gollob, Christopher S Simpson, Mario Talajic, Martin Gardner. Epinephrine infusion in the evaluation of unexplained cardiac arrest and familial sudden death: from the cardiac arrest survivors with preserved Ejection Fraction Registry. *Circ Arrhythm Electrophysiol.* **2012 Oct**;5(5):933-40. doi: 10.1161/CIRCEP.112.973230
- 71)** Perez MV, Friday K, Froelicher V. Semantic confusion: the case of early repolarization and the J point. *Am J Med.* **2012 Sep**;125(9):843-4. doi: 10.1016/j.amjmed.2011.08.024.
- 72)** Alessandro Zorzi 1, Federico Migliore 1, Martina Perazzolo Marra 1, Giuseppe Tarantini 1, Sabino Iliceto 1, Domenico Corrado 2Electrocardiographic J waves as a hyperacute sign of Takotsubo syndrome. *J Electrocardiol.* **Jul-Aug 2012**;45(4):353-356. doi: 10.1016/j.jelectrocard.2012.04.004
- 73)** Charles Antzelevitch 1Genetic, molecular and cellular mechanisms underlying the J wave syndromes, *Circ J.* **2012**;76(5):1054-65. doi: 10.1253/circj.cj-12-0284
- 74)** Alessandro Zorzi 1, Federico Migliore 1, Martina Perazzolo Marra 1, Giuseppe Tarantini 1, Sabino Iliceto 1, Domenico Corrado 2 Electrocardiographic J waves as a hyperacute sign of Takotsubo syndrome *J Electrocardiol.* Jul-Aug 2012;45(4):353-356. doi: 10.1016/j.jelectrocard.2012.04.004.
- 75)** Aizawa Y, Sato A, Watanabe H, et al. Dynamicity of the J-wave in idiopathic ventricular fibrillation with a special reference to pause-dependent augmentation of the. *J Am Coll Cardiol.* **2012 May** 29;59(22):1948-53. doi: 10.1016/j.jacc.2012.02.028.
- 76)** Annukka Marjamaa 1, Anita Hiippala, Bianca Arrhenius, Annukka M Lahtinen, Kimmo Kontula, Lauri Toivonen, Juha-Matti Happonen, Heikki Swan Intravenous epinephrine infusion test in diagnosis of catecholaminergic polymorphic ventricular tachycardia. *J Cardiovasc Electrophysiol.* **2012 Feb**;23(2):194-9. doi: 10.1111/j.1540-8167.2011.02188.x
- 77)** Rosso R, Glikson E, Belhassen B, Katz A, Halkin A, Steinvil A & Viskin S. Distinguishing ‘benign’ from ‘malignant early repolarization’: the value of the ST-segment morphology. *Heart Rhythm.* **2012 Feb**;9(2):225-9. doi: 10.1016/j.hrthm.2011.09.012.

- 78)** Kristoff A Olson 1, Anthony J Viera, Elsayed Z Soliman, Richard S Crow, Wayne D Rosamond. Long-term prognosis associated with J-point elevation in a large middle-aged biracial cohort: the ARIC study. *Eur Heart J.* **2011 Dec**;32(24):3098-106. doi: 10.1093/eurheartj/ehr264.
- 79)** Charles Antzelevitch 1, Gan-Xin Yan. J-wave syndromes. from cell to bedside *J Electrocardiol.* **Nov-Dec 2011**; 44(6):656-61. doi: 10.1016/j.jelectrocard.2011.07.026.
- 80)** Uberoi, Abhimanyu Uberoi 1, Nikhil A Jain, Marco Perez, Anthony Weinkopff, Euan Ashley, David Hadley, Mintu P Turakhia, Victor Froelicher. Early repolarization in an ambulatory clinical population. *Circulation.* **2011 Nov** 15;124(20):2208-14. doi:10.1161/CIRCULATIONAHA.111.047191
- 81)** Noseworthy PA, Weiner R, Kim J, et al. Early repolarization pattern in competitive athletes: clinical correlates and the effects of exercise training. *Circ Arrhythm Electrophysiol.* **2011 Aug**;4(4):432-40. doi: 10.1161/CIRCEP.111.962852.
- 82)** Laurence M Nunn 1, Justine Bhar-Amato, Martin D Lowe, Peter W Macfarlane, Pauline Rogers, William J McKenna, Perry M Elliott, Pier D Lambiase. Prevalence of J-point elevation in sudden arrhythmic death syndrome families. *J Am Coll Cardiol.* **2011 Jul** 12;58(3):286-90. doi: 10.1016/j.jacc.2011.03.028
- 83)** Rosso R, Adler A, Halkin A & Viskin S. Risk of sudden death among young individuals with J waves and early repolarization: putting the evidence into perspective. *Heart Rhythm.* **2011 Jun**;8(6):923-9. doi: 10.1016/j.hrthm.2011.01.037.
- 84)** Daisuke Haruta 1, Kiyotaka Matsuo, Akira Tsuneto, Shinichiro Ichimaru, Ayumi Hida, Nobuko Sera, Misa Imaizumi, Eiji Nakashima, Koji Maemura, Masazumi Akahoshi. Incidence and prognostic value of early repolarization pattern in the 12-lead electrocardiogram. *Circulation.* **2011 Jun 28**;123(25):2931-7. doi: 10.1161/CIRCULATIONAHA.110.006460.
- 85)** Juntila MJ, Sager SJ, Freiser M, et al. Inferolateral early repolarization in athletes. *J Interv Card Electrophysiol.* **2011 Jun**;31(1):33-8. doi: 10.1007/s10840-010-9528-y.
- 86)** Tikkanen JT, Juntila MJ, Anttonen O, et al. Early repolarization: Electrocardiographic phenotypes associated with favorable long-term outcome. *Circulation.* **2011 Jun** 14;123(23):2666-73. doi: 10.1161/CIRCULATIONAHA.110.014068.
- 87)** Surawicz B, Macfarlane PW. Inappropriate and confusing electrocardiographic terms: J-wave syndromes and early repolarization. *J*

Am Coll Cardiol. **2011 Apr** 12;57(15):1584-<https://pubmed.ncbi.nlm.nih.gov/21474037/#6>. doi: 10.1016/j.jacc.2010.11.040

88) Antzelevitch C, Yan GX, Viskin S. Rationale for the use of the terms J-wave syndromes and early repolarization. Rationale for the use of the terms J-wave syndromes and early repolarization. J Am Coll Cardiol. **2011 Apr** 12;57(15):1587-90. doi: 10.1016/j.jacc.2010.11.038.

89) Nademanee K, Veerakul G, Chandanamattha P, et al. Prevention of ventricular fibrillation episodes in Brugada syndrome by catheter ablation over the anterior right ventricular outflow tract epicardium. Circulation. **2011 Mar** 29;123(12):1270-9. doi: 10.1161/CIRCULATIONAHA.110.972612. Epub 2011 Mar 14..

90) Bastiaenen R, Hedley PL, Christiansen M, Behr ER. Therapeutic hypothermia and ventricular fibrillation storm in early repolarization syndrome. Heart Rhythm. **2010 Jun**;7(6):832-4. doi: 10.1016/j.hrthm.2010.02.037.

91) Sinner MF, Reinhard W, Müller M, et al. Association of early repolarization pattern on ECG with risk of cardiac and all-cause mortality: a population-based prospective cohort study (MONICA/KORA) PLoS Med. **2010 Jul**; 7(7): e1000314. Published online 2010 Jul 27. doi: 10.1371/journal.pmed.1000314

92) Gross GJ. Early repolarization and ventricular fibrillation: Vagally familiar? Heart Rhythm. **2010 May**; 7(5): 653-4. doi: 10.1016/j.hrthm.2010.02.008

93) Antzelevitch C, Yan GX. J wave syndromes. Heart Rhythm. **2010 Apr**; 7(4):549-58. doi: 10.1016/j.hrthm.2009.12.006.

94) Nam GB, Ko KH, Kim J, Park KM, Rhee KS, Choi KJ, Kim YH, Antzelevitch C. Mode of onset of ventricular fibrillation in patients with early repolarization pattern vs Brugada syndrome. Eur Heart J. **2010 Feb**; 31(3):330-9. doi: 10.1093/eurheartj/ehp423. FREE

95) Corrado D, Pelliccia A, Heidbuchel H et al. Recommendations for interpretation of 12-lead electrocardiogram in the athlete. **2010 Jan**; 31(2):243-59. doi: 10.1093/eurheartj/ehp473.

96) Charles Antzelevitch 1, Gan-Xin Yan J wave syndromes. PMID: 20153265 PMCID: PMC2843811 DOI: 10.1016/j.hrthm.2009.12.006

97) Jani T Tikkanen 1, Olli Anttonen, M Juhani Junttila, Aapo L Aro, Tuomas Kerola, Harri A Rissanen, Antti Reunanen, Heikki V Huikuri Long-term outcome associated with early repolarization on electrocardiography N Engl J Med. **2009 Dec** 24;361(26):2529-37. doi: 10.1056/NEJMoa0907589.

- 98)** James Ker 1, Lorraine du Toit. The accessory papillary muscle with inferior J-waves--peculiarity or hidden danger? *Cardiovasc Ultrasound*. 2009 Oct 29;7:50. doi: 10.1186/1476-7120-7-50.
- 99)** Konstantinos P Letsas 1, Frédéric Sacher, Vincent Probst, Reinhold Weber, Sébastien Knecht, Dietrich Kalusche, Michel Haïssaguerre, Thomas Arentz Prevalence of early repolarization pattern in inferolateral leads in patients with Brugada syndrome. *Heart Rhythm* **2008 Dec**;5(12): 1685-9. doi: 10.1016/j.hrthm.2008.09.021. Epub 2008 Sep 23.
- 100)** Aulo Di Grande 1, Vincenzo Tabita, Maria Maddalena Lizzio, Clemente Giuffrida, Ignazio Bellanuova, Marco Lisi, Cecilia Le Moli, Salvatore Amico. Early repolarization syndrome and Brugada syndrome: is there any linkage?, *Eur J Intern Med*. **2008 Jun**;19(4):236-40. doi: 10.1016/j.ejim.2007.06.013. FULL TEXT AVAILABLE
- 101)** Nam GB, Kim YH, Antzelevitch C. Augmentation of J waves and electrical storms in patients with early repolarization. *Engl J Med*. **2008 May** 8;358(19):2078-9. doi: 10.1056/NEJM0708182.
- 102)** Haïssaguerre M, Derval N, Sacher F, Jesel L, Deisenhofer I, de Roy L, Pasquié JL, Nogami A, Babuty D, Yli-Mayry S, De Chillou C, Scanu P, Mabo P, Matsuo S, Probst V, Le Scouarnec S, Defaye P, Schlaepfer J, Rostock T, Lacroix D, Lamaison D, Lavergne T, Aizawa Y, Englund A, Anselme F, O'Neill M, Hocini M, Lim KT, Knecht S, Veenhuyzen GD, Bordachar P, Chauvin M, Jais P, Coureau G, Chene G, Klein GJ, Clémenty J. Sudden cardiac arrest associated with early repolarization. *N Engl J Med*. **2008 May** 8;358(19):2016-23. doi: 10.1056/NEJMoa071968.
- 103)** Rituparna Shinde 1, Suresh Shinde, Chandrashekhar Makhale, Purvez Grant, Sunil Sathe, Manuel Durairaj, Yash Lokhandwala, Jose Di Diego, Charles Antzelevitch Occurrence of "J waves" in 12-lead ECG as a marker of acute ischemia and their cellular basis *Pacing Clin Electrophysiol*. **2007 Jun**;30(6):817-9. doi: 10.1111/j.1540-8159.2007.00760.x.
- 104)** Yaga Szlachcic 1, LeeAnne Carrothers, Rodney Adkins, Robert Waters Clinical significance of abnormal electrocardiographic findings in individuals aging with spinal injury and abnormal lipid profiles. *J Spinal Cord Med*. **2007**;30(5):473-6. doi: 10.1080/10790268.2007.11754580.
- 105)** Konstantinos P Letsas, Michalis Efremidis, Loukas K Pappas, Gerasimos Gavrielatos, Virginia Markou, Antonios Sideris, Fotis Kardaras. Early repolarization syndrome: is it always benign? *Int J Cardiol*. **2007 Jan** 18;114(3):390-2. doi: 10.1016/j.ijcard.2005.11.078

- 106)** Komiya N, Imanishi R, Kawano H, Shibata R, Moriya M, Fukae S, et al. Ventricular fibrillation in a patient with prominent J wave in the inferior and lateral electrocardiographic leads after gastrostomy. *Pacing Clin Electrophysiol*. **2006 Sep**;29(9):1022-4.
- 107)** Shinohara T, Takahashi N, Saikawa T, Yoshimatsu H. Characterization of J wave in a patient with idiopathic ventricular fibrillation. *Heart Rhythm*. **2006 Sep**;3(9):1082-4. doi: 10.1016/j.hrthm.2006.05.016.
- 108)** van den Berg MP, Wiesfeld AC. Brugada syndrome with ST-segment elevation in the lateral leads. *Cardiovasc Electrophysiol. J Cardiovasc Electrophysiol*. **2006 Sep**;17(9):1035. doi: 10.1111/j.1540-8167.2006.00525.x.
- 109)** Juan Shu 1, Tiangang Zhu, Lin Yang, Changcong Cui, Gan-Xin Yan. ST-segment elevation in the early repolarization syndrome, idiopathic ventricular fibrillation, and the Brugada syndrome: cellular and clinical linkage. *J Electrocardiol*. **2005 Oct**;38(4 Suppl):26-32. doi: 10.1016/j.jelectrocard.2005.06.006.
- 110)** Riera AR, Schapachnik E, Sanches PC, Moffa PJ. Brugada syndrome with atypical ECG: Downsloping ST-segment elevation in inferior leads. *J Electrocardiol*. **2004 Apr**;37(2):101-4. doi: 10.1016/j.jelectrocard.2004.01.002.
- 111)** Raúl Carrillo-Esper 1, Leonardo Limón-Camacho, Héctor Luis Vallejo-Mora, Vladimir Contreras-Domínguez, César Hernández-Aguilar, Roberto Carvajal-Ramos, Pedro Salmerón-Nájera. [Non-hypothermic J wave in subarachnoid hemorrhage. *Cir Cir*. **Mar-Apr 2004**;72(2):125-9.
- 112)** Gussak 1, Preben Bjerregaard, John Kostis. Electrocardiographic "lambda" wave and primary idiopathic cardiac asystole: a new clinical syndrome?. *J Electrocardiol*. **2004 Apr**;37(2):105-7. doi: 10.1016/j.jelectrocard.2004.01.001
- 113)** Mitsunori Maruyama 1, Yoshinori Kobayashi, Eitaroh Kodani, Yoshiyuki Hirayama, Hirotsugu Atarashi, Takao Katoh, Teruo Takano. Osborn waves: history and significance. *Indian Pacing Electrophysiol J*. **2004 Jan** 1;4(1):33-9.
- 114)** Ramazan Topsakal 1, Hayrettin Sağlam, Hüseyin Arinç, Namik Kemal Eryol, Servet Cetin. Electrocardiographic J wave as a result of hypercalcemia aggravated by thiazide diuretics in a case of primary hyperparathyroidism. *Jpn Heart J*. **2003 Nov**;44(6):1033-7. doi: 10.1536/jhh.44.1033.
- 115)** Klatsky AL, Oehm R, Cooper RA, Udaltsova N, Armstrong MA. The early repolarization normal variant electrocardiogram:

- correlates and consequences. Am J Med. **2003 Aug** 15;115(3):171-7. doi: 10.1016/s0002-9343(03)00355-3.
- 116)** Rachel R Marcus 1, Damayanthi Kalisetti, Vinod Raxwal, B Jenny Kiratli, Jonathan Myers, Inder Perkash, Victor F Froelicher Early repolarization in patients with spinal cord injury: prevalence and clinical significance J Spinal Cord Med. Spring **2002**;25(1):33-8; discussion 39. doi: 10.1080/10790268.2002.11753599.
- 117)** Mitsunori Maruyama 1, Hirotsugu Atarashi, Takeshi Ino, Hiroshi Kishida Osborn waves associated with ventricular fibrillation in a patient with vasospastic anginaJ Cardiovasc Electrophysiol. **2002 May**;13(5):486-9. doi: 10.1046/j.1540-8167.2002.00486.x.
- 118)** Geller JC, Reek S, Goette A, Klein HU. Spontaneous episode of polymorphic ventricular tachycardia in a patient with intermittent Brugada syndrome. J Cardiovasc Electrophysiol . **2001 Sep**;12(9):1094.
- 119)** Gussak I, Antzelevitch C. Early repolarization syndrome: clinical characteristics and possible cellular and ionic mechanisms. J Electrocardiol. **2000 Oct**;33(4):299-309. doi: 10.1054/jclc.2000.18106.
- 120)** Nademanee K, Taylor R, Bailey W E, Rieders D E, Kosar E M. Treating electrical storm: sympathetic blockade versus advanced cardiac life support-guided therapy. Circulation. **2000 Aug 15**;102(7):742-7. doi: 10.1161/01.cir.102.7.742
- 121)** Takagi M, Aihara N, Takaki H, Taguchi A, Shimizu W, Kurita T, Suyama K, Kamakura S. Clinical characteristics of patients with spontaneous or inducible ventricular fibrillation without apparent heart disease presenting with J wave and ST segment elevation in inferior leads. J Cardiovasc Electrophysiol . **2000 Aug**;11(8):844-8. doi: 10.1111/j.1540-8167.2000.tb00062.x.
- 122)** Pelliccia A, Maron BJ, Culasso F, et al. Clinical significance of abnormal electrocardiographic patterns in trained athletes. Circulation. **2000 Jul 18**;102(3):278-84. doi: 10.1161/01.cir.102.3.278.
- 123)** Greene M, Newman D, Geist M, Paquette M, Heng D, Dorian P. Is electrical storm in ICD patients the sign of a dying heart? Outcome of patients with clusters of ventricular tachyarrhythmias. Europace. **2000 Jul**; **2** (3):263-9. 2000 Jul;2(3):263-9. doi: 10.1053/eupc.2000.0104
- 124)** Daimon M, Inagaki M, Morooka S, Fukuzawa S, Sugioka J, Kushida S, et al. Brugada syndrome characterized by the appearance of J waves. Pacing Clin Electrophysiol . **2000 Mar**; 23(3):405-6.

- 125) J Otero I, D J Lenihan The "normothermic" Osborn wave induced by severe hypercalcemia Tex Heart Inst J. **2000**;27(3):316-7
- 126) Kalla H, Yan GX, Marinchak R. Ventricular fibrillation in a patient with prominent J (Osborn) waves and ST segment elevation in the inferior electrocardiographic leads: A Brugada syndrome variant? J Cardiovasc Electrophysiol. **2000 Jan**;11(1):95-8.
- 127) Yan GX, Antzelevitch C. Cellular basis for the Brugada syndrome and other mechanisms of arrhythmogenesis associated with ST segment elevation. Circulation. **1999 Oct** 12;100(15): 1660-6. doi: 10.1161/01.cir.100.15.1660.
- 128) Mehta M, Jain AC, Mehta A. Early repolarization. Clin Cardiol. Clin Cardiol. **1999 Feb**;22(2):59-65. doi: 10.1002/clc.4960220203.
- 129) Credner S C, Klingenberg T, Mauss O, Sticherling C, Hohnloser S H. Electrical storm in patients with transvenous implantable cardioverter-defibrillators: incidence, management and prognostic implications. J. Am. Coll. Cardiol. **1998 Dec**;32(7):1909-15. doi: 10.1016/s0735-1097(98)00495-1.
- 130) Yan GX, Antzelevitch C. Cellular basis for the electrocardiographic J wave. Circulation. **1996 Jan** 15;93(2):372-9. doi: 10.1161/01.cir.93.2.372.
- 131) Mehta MC, Jain AC. Early repolarization on scalar electrocardiogram. Am J Med Sci. **1995 Jun**;309(6):305-11. doi: 10.1097/00000441-199506000-00001
- 132) Gussak I, Bjerregaard P, Egan TM, Chaitman BR. ECG phenomenon called the J wave. History, pathophysiology, and clinical significance. J Electrocardiol. **1995 Jan**;28(1):49-58. doi: 10.1016/s0022-0736(05)80007-x.
- 133) A Patel I, J Getsos Bjerregaard P, Gussak I, Kotar SI, Gessler JE. Recurrent syncope in a patient with prominent J-wave. Am Heart J. **1994 May**;127(5):1426-30. doi: 10.1016/0002-8703(94)90070-1.
- 134) Patel A, Getsos JP, Moussa G, Damato AN. The Osborn wave of hypothermia in normothermic patients. Clin Cardiol 1994; 17:273-276. Clin Cardiol. **1994 May**;17(5):273-6. doi: 10.1002/clc.4960170511.)
- 135) Patel A, Getsos J. Osborn waves of hypothermia. N Engl J Med 1994; 330: 680. Images in clinical medicine. Osborn waves of hypothermia. N Engl J Med. **1994 Mar** 10;330(10):680. doi: 10.1056/NEJM199403103301005.

- 136)** Eagle K. Images in clinical medicine: Osborn waves of hypothermia. *N Engl J Med.* **1994 Mar** 330(10):680. doi: 10.1056/NEJM199403103301005.
- 137)** Mirvis DM. Anatomic basis for the injury current producing ST-segment shifts on the body surface ECG. *J Electrocardiol.* **1992;** 24 Suppl:41-3. doi: 10.1016/s0022-0736(10)80013-5.
- 138)** M F Arnsdorf 1The cellular basis for the injury current producing ST-segment shifts in the surface ECG. *J Electrocardiol.* **1992;** 24 Suppl:40. doi: 10.1016/s0022-0736(10)80012-3
- 139)** Litovsky SH, Antzelevitch C. Rate dependence of action potential duration and refractoriness in canine ventricular endocardium differs from that of epicardium: role of the transient outward current. *J Am Coll Cardiol.* **1989 Oct; 14(4):1053-66.** doi: 10.1016/0735-1097(89)90490-7.
- 140)** Hugo N, Dormehl IC, van Gelder AL. A positive wave at the J-point of electrocardiograms of anaesthetized baboons (*Papio ursinus*). *J Med Primatol.* 1988;17(6):347-52.
- 141)** Huston P, Puffer JC, MacMillan RW. The athletic heart syndrome. *N Engl J Med.* **1985 Jul** 313(1):24-32. doi: 10.1056/NEJM198507043130106
- 142)** Sridharan MR, Horan LG. Electrocardiographic J wave of hypercalcemia. *Am J Cardiol.* **1984 Sep** 54(6):672-3. doi: 10.1016/0002-9149(84)90273-x.
- 143)** Douglas PS, Carmichael KA, Palevsky PM. Extreme hypercalcemia and electrocardiographic changes. *Am J Cardiol.* **1984 Sep** 54(6):674-5. doi: 10.1016/0002-9149(84)90274-1
- 144)** Okada M, Nishimura F, Yoshino H, Kimura M, Ogino T. The J wave in accidental hypothermia. *J Electrocardiol.* **1983 Jan;**16(1): 23-8. doi: 10.1016/s0022-0736(83)80155-1.
- 145)** T C Chou, F Wenzke. The importance of R on T phenomenon. *Am Heart J.* **1978 Aug;**96(2):191-4. doi: 10.1016/0002-8703(78)90085-6
- 146)** Thompson R, Rich J, Chmelik F, Nelson WL. Evolutionary changes in the electrocardiogram of severe progressive hypothermia. *J Electrocardiol.* 1977 *J Electrocardiol.* **1977 Jan;**10(1):67-70. doi: 10.1016/s0022-0736(77)80034-4.
- 147)** Gotoh K. A histopathological study on the conduction system of the so-called “Pokkuri disease” (sudden unexpected cardiac death of unknown origin in Japan). *Jpn Circ J.* 1976; 40:753–76. *Jpn Circ J.* **1976 Jul;**40(7):753-68. doi: 10.1253/jcj.40.753.

- 148)** Clements SD, Hurst JW. Diagnostic value of ECG abnormalities observed in subjects accidentally exposed to cold. Am J Cardiol. **1972**;29:729–734.
- 149)** DeSweit J: Changes simulating hypothermia Changes simulating hypothermia in the electrocardiogram in subarachnoid hemorrhage. J Electrocardiol. **1972**;5(2):93-5.
- 150)** A Trevino, B Razi, B M Beller The characteristic electrocardiogram of accidental hypothermia Arch Intern Med. **1971 Mar**; 127(3):470-3
- 151)** E L Rothfeld. Hypothermic hump. JAMA. **1970 Jul** 27;213(4): 626. doi: 10.1001/jama.1970.03170300070023
- 152)** J P Fernandez, R A O'Rourke, G A Ewy Rapid active external rewarming in accidental hypothermia. *JAMA*. **April 6, 1970**;212(1):153-6 156.doi:10.1001/jama.1970.03170140109029.)
- 153)** Phillipson EA, Herbert FA. Accidental exposure to freezing: Clinical and laboratory observations during convalescence from near-fatal hypothermia. Can Med Assoc J. **1967 Sep** 23; 97(13): 786–792. PMC1923325
- 154)** Wasserburger RH, Alt WJ. The normal RS-T segment elevation variant. Am J Cardiol . **1961 Aug**; 8:184-92. doi: 10.1016/0002-9149(61)90204-1.
- 155)** Hersch C. Electrocardiographic changes in head injuries. Circulation, **1961 Jun**;23:853-60. doi: 10.1161/01.cir.23.6.853.
- 156)** WEST TC, FREDERICKSON EL, AMORY DW Single fiber recording of the ventricular response to induced hypothermia in the anesthetized dog: correlation with multicellular parameters. Circ Res. **1959 Nov**; 7:880-8. doi: 10.1161/01.res.7.6.880.
- 157)** Caldini P. Ventricular fibrillation in induced hypothermia. Postgrad Med J. Postgrad Med J . **1959 Oct**;35(408):538-42. doi: 10.1136/pgmj.35.408.538.
- 158)** EMSLIE-SMITH D, SLADDEN GE, STIRLING GR The significance of changes in the electrocardiogram in hypothermia. Br Heart J . **1959 Jul**;21(3):343-51. doi: 10.1136/hrt.21.3.343.
- 159)** Osborn JJ. Experimental hypothermia: respiratory and blood pH changes in relation to cardiac function. Am J Physiol **1953 Dec**;175(3): 389-98.; 175:389–398. doi: 10.1152/ajplegacy.1953.175.3.389.
- 160)** Myers CR, Klein HA, Stofer BE. and Hiratzka T. Normal variations in multiple precordial leads. Am. Heart J, **1947 Dec**;34(6): 785-808. doi: 10.1016/0002-8703(47)90144-0.

- 161)** Talbott JH: The physiologic and therapeutic effects of hypothermia. New Eng J Med 224: 281-288, **February 13, 1941**. N Engl J Med 1941; 224:281-288. DOI: 10.1056/NEJM194102132240705
- 162)** Tomaszewski W. Changements electrocardiographiques observes chez un homme mort de froid. Arch Mal Coeur **1938**; 31:525–528.
- 163)** Shipley AM. Suppurative Pericarditis: Late Results and Methods of Drainage. Annals of surgery. 1936; 103:698-705.
- 164)** Shilpey R, Hallaran W. The four lead electrogram in 200 normal men and women. Am Heart J **March 1936**; 11:325–345.
- 165)** Kraus F, Zondek SG. Uber die Durchtrankungsspannung. Klinische Wochenschrift. **1922**; 1(36), 1778-1779. <https://doi.org/10.1007/BF01712506>
- 166)** Kraus F. Ueber die wirkung des kalziums auf den kreislauf. Dtsch Med Wochenschr. **1920**; 46:201–203. (in German) **About the effect of calcium on the circulation.**