

CURRICULUM VITAE

WATARU SHIMIZU, M.D., Ph.D.

April 1, 2023

PLACE OF BIRTH: Hiroshima City, Hiroshima, JAPAN
DATE OF BIRTH: March 7, 1961
CITIZENSHIP: Japan
PRESENT ADDRESS: 4-34-12-901, Hakusan, Bunkyo-ku, Tokyo 112-0001 JAPAN
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EDUCATION:

1985 Hiroshima University School of Medicine, Hiroshima, Japan M.D.
1992 Hiroshima University School of Medicine, Hiroshima, Japan Ph.D.

LICENSE:

1985 Medical Practice in Japan (No. 288643)

BOARD CERTIFICATE:

1990 Established Physician (approved by Japanese Society of Internal Medicine, No. 1093)
1993 Established Cardiologist (approved by Japanese Circulation Society, No. 10263)
2014 Established Electrophysiologist (approved by Japanese Heart Rhythm Society, No. 0511)

CURRENT POSSISION:

Professor and Chairman, Department of Cardiovascular Medicine
Nippon Medical School, Tokyo, Japan

VISITING PROFESSOR, DIRECTOR:

Visiting Director, Department of Cardiovascular Medicine,
National Cerebral and Cardiovascular Center, Osaka, Japan

Visiting Professor, Department of Cardiovascular and Respiratory Medicine, Shiga
University of Medical Science, Ohtsu, Japan

Visiting Professor, Second Department of Internal Medicine, Tokyo Medical
College, Tokyo, Japan

Visiting Professor, Division of Cardiology, Department of Internal Medicine,
Saitama Medical College, Saitama, Japan

Visiting Professor, Department of Cardiovascular Medicine, Hiroshima University
of School of Medicine, Hiroshima, Japan

POSTDOCTORAL TRAINING AND PROFESSIONAL EXPERIENCE:

- 1985-87 Resident in Medicine, Hiroshima University School of Medicine, Japan
1987-90 Resident in Cardiology, National Cardiovascular Center, Osaka, Japan
1990-91 Research and Clinical Fellow, Hiroshima University School of Medicine, Japan
1992- Clinical Staff, Division of Cardiology, Department of Internal Medicine, National Cardiovascular Center, Osaka, Japan
1996-98 Research Scientist, Masonic Medical Research Laboratory, Utica, NY
1998-2003 Clinical Staff, Division of Cardiology, Department of Internal Medicine, Co-Director, Clinical Cardiac Electrophysiology Laboratory, National Cardiovascular Center, Osaka, Japan
2003-pres. Guest Associate Professor, Department of Cardiovascular and Respiratory Medicine, Shiga University of Medical Science, Ohtsu, Japan
2003-2011. Senior Staff, Division of Cardiology, Department of Internal Medicine, Co-Director, Clinical Cardiac Electrophysiology Laboratory, National Cardiovascular Center, Osaka, Japan
2005-pres Guest Associate Professor, Division of Cardiology, Department of Internal Medicine, Saitama Medical College, Saitama, Japan
2005-pres Visiting Professor, Second Department of Internal Medicine, Tokyo Medical College, Tokyo, Japan
2006-pres Invited Professor, The Center for Advanced Medical Engineering and Informatics, Osaka University, Osaka, Japan
2007-pres Visiting Professor, Division of Cardiology, Department of Internal Medicine, Saitama Medical College, Saitama, Japan
2011-2013 Clinical Professor, Department of Cardiovascular Medicine, Kyoto University, Kyoto, Japan
2011-pres Director, Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center, Osaka, Japan
2013-pres Visiting Director, Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center, Osaka, Japan
2013-pres Visiting Professor, Department of Cardiovascular and Respiratory Medicine, Shiga University of Medical Science, Ohtsu, Japan
2013-pres Professor, Department of Cardiovascular Medicine Nippon Medical School, Tokyo, Japan

PROFESSIONAL ACTIVITIES:

Memberships:

- 1995- Member, North American Society of Pacing and Electrophysiology
1996- Member, International Society for Holter and Noninvasive Electrocardiology
1999- Councilor, Japanese Society of Cardiac Pacing and Electrophysiology (JHRS)
2000- Member, Basic Cardiovascular Science, American Heart Association
2001- Member, Academic Council, Japanese Society of Electrocardiology
2002 Faculty, North American Society of Pacing and Electrophysiology
2002 Faculty, Cardiostim
2003- Councilor, Japanese Society of Electrocardiology
2010- Director, Japanese Society of Electrocardiology
2014- Councilor, Japanese Society of Internal Medicine
2014- Assistant of President, Japanese College of Cardiology (JCC)
2015- Director, Japanese Heart Rhythm Society (JHRS)
2016- Director, Japanese Circulation Society (JCS)

2016- Director, Japanese College of Cardiology (JCC)
 2018- Director, Asian-Pacific Heart Rhythm Society (APHRs)
 2019- 1st Vice President (President Elect), Asian-Pacific Heart Rhythm Society (APHRs)
 2020- Managing Director (In charge of Education), Japanese Circulation Society (JCS)
 2020- President, Japanese Heart Rhythm Society (JHRS)

Editor-in-Chief:

2023- *Internal Medicine*

Deputy Editor:

2021- *JACC Asia*

Associate Editor:

2007- *Cardiology Journal (Folia Cardiologica)*

2012- *Journal of Cardiology Cases*

2007- *Journal of Arrhythmia*

2016- *Circulation Journal*

Editorial Board:

2003-	<i>Journal of Cardiovascular Electrophysiology</i>
2004-	<i>Heart Rhythm</i>
2004-	<i>Future Cardiology</i>
2008-	<i>Europace</i>
2013-	<i>Circulation Journal</i>

Review:

1996- *Journal American College of Cardiology*
 1996- *Annals of Noninvasive Electrocardiology*
 1997- *Journal of Cardiovascular Electrophysiology*
 1998- *Japanese Circulation Journal*
 1999- *Journal of Arrhythmia*
 1999- *PACE*
 2001- *Heart*
 2001- *Journal of Physiology*
 2002- *Circulation*
 2002- *Shindenzu*
 2002- *Heart and Vessels*
 2003- *European Heart Journal*
 2003- *International Journal of Cardiology*
 2003- *Japanese Heart Journal*
 2003- *Heart Rhythm*
 2004- *J Hum Genet*
 2004- *British Journal of Pharmacology*
 2006- *Lancet*
 2006- *Circulation Research*
 2007- *Nat Clin Pract Cardiovasc Med*
 2007- *Am J Cardiol*

HONORS AND SPECIAL AWARDS:

- Oct. 1992 First Prize, Kimura Eiichi Award, 9th Annual Scientific Meeting of Japanese Society of Electrocardiology, “Early afterdepolarizations induced by isoproterenol in patients with congenital long QT syndrome”
- May. 1997 First Prize, Young Investigators Awards Competition, Basic Research, 18th Annual Scientific Sessions of North American Society of Pacing and Electrophysiology, “Sodium channel block with mexiletine is effective in reducing dispersion of repolarization and preventing torsade de pointes in LQT2 as well as LQT3 models of the long QT syndrome”
- Mar. 1998 Finalist, Young Investigators Awards Competition, Physiology, Pharmacology, and Pathology, 47th Annual Scientific Sessions of the American College of Cardiology, “Cellular basis for the electrocardiographic features of the LQT1 form of the long QT syndrome. Effects of β adrenergic agonists, antagonists and sodium channel blockers on transmural dispersion of repolarization and torsade de pointes”
- Apr. 1999 First Prize, Jos Willems Young Investigator’s Award Competition, 24th Annual Conference of the International Society for Computerized Electrocardiography, “Differential response of transmural dispersion of repolarization and torsade de pointes to β -adrenergic agonists and antagonists in LQT1, LQT2 and LQT3 models of the long QT syndrome”
- Sep. 2003 First Prize, 3rd Ikagaku-Ooyo Research Foundation Award, 20th Annual Scientific Meeting of Japanese Society of Electrocardiology, “Differential effects of β -blockade on dispersion of repolarization in absence and presence of sympathetic stimulation between LQT1 and LQT2 forms of congenital long QT syndrome”
- Mar. 2008 33rd Sato Award, Japan Heart Foundation, 72nd Annual Scientific Session of Japanese Circulation Society, “Clinical Impact of Genetic Studies in Lethal Inherited Cardiac Arrhythmias”

RESEARCH GRANTS AND FELLOWSHIP RECEIVED:

Fellowship:

- 1995-96 Medtronic Japan Fellowship for Young Japanese Investigator (\$26.000)
1997-99 American Heart Association (New York State Affiliate) Fellowship (\$70.000)

Grants:

- 1995 Japan Cardiovascular Research Foundation, Bayer Cardiovascular Disease Research Scholarship ¥2.500.000 (\$22.000) **(Principal Investigator)**
- 1998 Suzuken Memorial Foundation ¥1.000.000 (\$9.000) **(Principal Investigator)**
- 1999 Japan Heart Foundation by Zeria Pharmaceutical Co. ¥1,000,000 (\$9.000) **(Principal Investigator)**
- 1999 Japan Cardiovascular Research Foundation ¥1.000.000 (\$9.000) **(Principal Investigator)**
- 1999-2001 Japan Cardiovascular Research Foundation, Research Grant for Cardiovascular Diseases (11C-1) from the Ministry of Health and Welfare ¥3.150.000 (\$30.000)
- 2000 Japan Heart Foundation, Pfizer Pharmaceutical Grant for Research on Coronary Artery Disease. ¥500.000 (\$4.300) **(Principal Investigator)**
- 2000 Research Grant from the Ministry of Education and Technology. ¥250.000 (\$2.200)
- 2000 Kanae Foundation ¥1.000.000 (\$9.000) **(Principal Investigator)**
- 2000 Kato Memorial Bioscience Foundation ¥2.000.000 (\$17.000) **(Principal Investigator)**
- 2001 Japan Heart Foundation, Pfizer Pharmaceutical Grant for Research on Coronary Artery Disease. ¥2.00.000 (\$17.000) **(Principal Investigator)**
- 2001 Japan Cardiovascular Research Foundation ¥1.000.000 (\$9.000) **(Principal Investigator)**
- 2002-2004 Vehicle Racing Commemorative Foundation ¥6.000.000 (\$54.000)
- 2002-2004 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (14130601) ¥2.700.000 (\$23.000)
- 2003 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (H13-Genome-004) ¥2.000.000 (\$18.000)
- 2003-2005 Japan Cardiovascular Research Foundation, Research Grant for Cardiovascular Diseases (15C-6) from the Ministry of Health, Labour and Welfare ¥4.500.000 (\$40.000)
- 2004 Mitsubishi Pharma Research Foundation ¥2.000.000 (\$18.000) **(Principal Investigator)**
- 2005-2006 Hoanshya Research Foundation ¥5.000.000 (\$46.000) **(Principal Investigator)**
- 2005 Japan Research Foundation for Clinical Pharmacology ¥2.000.000 (\$18.000) **(Principal Investigator)**
- 2005-2007 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (H17 - Research on Human Genome, Tissue Engineering - 009) ¥4.500.000 (\$38.000)
- 2005-2007 Ministry of Education, Culture, Sports, Science and Technology Leading Project for Biosimulation ¥4.000.000 (\$34.000)

2006 Uehara Memorial Foundation ¥5,000,000 (\$44,000) **(Principal Investigator)**

2006-2008 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (H18 - Research on Human Genome, Tissue Engineering - 002) ¥147,030,000 (\$1,470,000) **(Principal Investigator)**

2009 Research Grant for the Cardiovascular Diseases from the Ministry of Health, Labour and Welfare (21-Shitei-8) ¥24,000,000 (\$270,000) **(Principal Investigator)**

2009 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (H21-Nanchi-Ippan-122) (Kamakura) ¥2,500,000 (\$28,000)

2009-2011 Translational Research Grant, Japanese Circulation Society, (Fukuda) ¥6,000,000 (\$67,000)

2010-2012 Research Grant for the Cardiovascular Diseases from the Ministry of Health, Labour and Welfare (22-4-7), ¥78,000,000 (\$7,000,000) **(Principal Investigator)**

2010-2012 Research Grant for the Cardiovascular Diseases from the Ministry of Health, Labour and Welfare (22-1-2), ¥8,400,000 (\$76,000)

2010-2012 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (22141001) ¥3,500,000 (\$32,000)

2010-2012 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (Horie) ¥6,800,000 (\$61,000)

2010-2011 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (Makita) ¥2,900,000 (\$26,000)

2010 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (Horigome) ¥1,500,000 (\$14,000)

2010 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (Makita) ¥2,900,000 (\$26,000)

2012-2013 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (H24-Nanchi-Ippan-033) ¥145,000,000 (\$1,300,000) **(Principal Investigator)**

2012-2014 Translational Research Grant, Japanese Circulation Society, (Horie) ¥4,000,000 (\$33,000)

2014 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (Horie) ¥3,000,000 (\$27,000)

2013-2015 Research Grant for the Cardiovascular Diseases from the Ministry of Health, Labour and Welfare (Morisaki), ¥4,200,000 (\$35,000)

2013-2015 Research Grant for the Cardiovascular Diseases from the Ministry of Health, Labour and Welfare (Miyamoto) ¥2,500,000 (\$35,000)

2014 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (Takashima) ¥2,500,000 (\$20,800)

2014 Research Grants from Nippon Medical School ¥9,000,000 (\$75,000) **(Principal Investigator)**

2015-2017 Health Sciences Research Grants from the Ministry of Health, Labour and Welfare (H27-Nanchi-Ippan-032) (Horie) ¥900,000 (\$7,500)

2015-2016 Research Grants from AMED (Takashima) ¥2,200,000 (\$20,000)

2015-2017 Research Grants from AMED (Makita) ¥2,980,000 (\$27,000)

2016 Research Grants from AMED (Aiba) ¥500,000 (\$4,500)

2016-2017 Research Grant for the Cardiovascular Diseases from the Ministry of Health, Labour and Welfare (Shiba), ¥2,400,000 (\$22,000)

2016 Suzuki Memorial Research Grant. ¥1,000,000 (\$9,000) **(Principal Investigator)**

2016-2017 Suzuki Memorial Research Grant (Kusano). ¥800,000 (\$7,200)
2017-2019 Research Grants from AMED (Nakano) ¥2,650,000 (\$24,000)
2018 Health Sciences Research Grants from the Ministry of Health, Labour and
Welfare (H29-Nanchi-Ippan-055) (Yoshinaga) ¥1,300,000 (\$12,000)
2018 Research Grant, Japanese Circulation Society, (Aiba) ¥500,000 (\$4,500)
2019 Research Grants from AMED (Makita) ¥500,000 (\$5,500)

PUBLICATIONS (written in English):

(Book, First Author only)

1. **Shimizu W**, Ohe T, Nagata S, Shimomura K: Arrhythmogenic right ventricular dysplasia: Clinical features, diagnosis, treatment, and prognosis. in Sekiguchi M, Olsen E G L (eds): *Cardiomyopathy Update 5. Prognosis and treatment of cardiomyopathies and myocarditis*: p. 295-310, University of Tokyo Press, 1994
2. **Shimizu W**, Ohe T, Antzelevitch C: Early afterdepolarizations and polymorphic ventricular arrhythmias in acquired and congenital long QT syndrome: Observations from clinical and experimental studies. in Franz M R (ed): *Monophasic Action Potentials. Bridging Cell and Bedside*. p. 641-658, Futura Publishing Company, Inc., NY, 2000
3. **Shimizu W**: Acquired forms of Brugada syndrome. in Antzelevitch C (ed): *The Brugada Syndrome: From bench to bedside*, Chapter 14, p. 166-177, Blackwell Futura, UK, 2004
4. **Shimizu W**, Ackerman MJ: Chapter 28, Provocative testing in inherited arrhythmias. in Gussak I, Antzelevitch C, Wilde A, Friedman P, Ackerman MJ, Shen WK (eds): *Electrical Diseases of the Heart: Genetics, Mechanisms, Treatment, Prevention*, p. 424-433, Springer, UK, 2007
5. **Shimizu W**: Chapter 50, Acquired form of Brugada syndrome. in Gussak I, Antzelevitch C, Wilde A, Friedman P, Ackerman MJ, Shen WK (eds): *Electrical Diseases of the Heart: Genetics, Mechanisms, Treatment, Prevention*, p. 719-728, Springer, UK, 2007
6. **Shimizu W**, Antzelevitch C: Long QT syndrome. in Lang F (ed): *Molecular mechanisms of disease: an Encyclopedic reference*, p -, Springer, UK, 2011
7. **Shimizu W**: Diagnostic evaluation of long QT syndrome. in Priori SG (ed): *Cardiac electrophysiology clinics. volume 4*, p. 29-37, Elsevier, Philadelphia, 2012
8. **Shimizu W**, Ackerman MJ: Chapter 50, Provocative (drug) testing in inherited arrhythmias. in Gussak I, Antzelevitch C, Wilde A, Powell B, Ackerman MJ, Shen WK (eds): *Electrical Diseases of the Heart (Second edition): Genetics, Mechanisms, Treatment, Prevention, Part IV. Clinical rhythmology: Diagnostic methods and tools*, p. -, Springer, UK, Oxford, 2013 (in press)
9. **Shimizu W**: Chapter 40, Acquired form of Brugada syndrome. in Gussak I, Antzelevitch C, Wilde A, Powell B, Ackerman MJ, Shen WK (eds): *Electrical Diseases of the Heart (Second edition): Genetics, Mechanisms, Treatment, Prevention, Part III. Secondary Hereditary and Acquired Cardiac Channelopathies, and Sudden Cardiac Death*, p. -, Springer, UK, Oxford, 2013

(Book, Supervision)

1. Early Repolarization Syndrome. In Shimizu W (ed): Springer, UK, Oxford, 2017

(Original and Review Article, First Author, Equally contributed only)

1. **Shimizu W**, Ohe T, Kurita T, Takaki H, Aihara N, Kamakura S, Matsuhisa M, Shimomura K: Early afterdepolarizations induced by isoproterenol in patients with congenital long QT syndrome. *Circulation* 84: 1915-1923, 1991
2. **Shimizu W**, Ohe T, Kurita T, Shimomura K: Differential response of QTU interval

- to exercise, isoproterenol, and atrial pacing in patients with congenital long QT syndrome. *PACE* 14: 1966-1970, 1991
3. **Shimizu W**, Ohe T, Shimomura K: Ventricular tachycardia originating from the right ventricular free wall in a patient with old myocardial infarction. *CHEST* 100: 276-277, 1991
 4. **Shimizu W**, Tanaka K, Suenaga K, Wakamoto A: Bradycardia-dependent early afterdepolarizations in a patient with QTU prolongation and Torsade de Pointes in association with marked bradycardia and hypokalemia. *PACE* 14: 1105-1111, 1991
 5. **Shimizu W**, Ohe T, Kurita T, Takaki H, Aihara N, Kamakura S, Matsuhisa M, Shimomura K: Effects of a combination of disopyramide and mexiletine on the anterograde accessory pathway conduction in patients with Wolff-Parkinson-White syndrome. *Eur Heart J* 13: 261-268, 1992
 6. **Shimizu W**, Tsuchioka Y, Karakawa S, Nagata K, Mukai J, Yamagata T, Matsuura H, Kajiyama G, Matsuura Y: Differential effect of pharmacological autonomic blockade on some electrophysiological properties of the human ventricle and atrium. *Br Heart J* 71: 34-37, 1994
 7. **Shimizu W**, Kamakura S, Ohe T, Kurita T, Takaki H, Aihara N, Shimomura K: Diagnostic value of recovery time measured by body surface mapping in patients with congenital long QT syndrome. *Am J Cardiol* 74: 780-785, 1994
 8. **Shimizu W**, Ohe T, Kurita T, Tokuda T, Shimomura K: Epinephrine-induced ventricular premature complexes due to early afterdepolarizations and effects of verapamil and propranolol in a patient with congenital long QT syndrome. *J Cardiovasc Electrophysiol* 5: 438-444, 1994
 9. **Shimizu W**, Ohe T, Kurita T, Kawade M, Arakaki Y, Aihara N, Kamakura S, Kamiya T, Shimomura K: Effects of verapamil and propranolol on early afterdepolarizations and ventricular arrhythmias induced by epinephrine in congenital long QT syndrome. *J Am Coll Cardiol* 26: 1299-1309, 1995
 10. **Shimizu W**, Kurita T, Suyama K, Aihara N, Kamakura S, Shimomura K: Reverse use dependence of human ventricular repolarization by chronic oral sotalol in monophasic action potential recordings. *Am J Cardiol* 77: 1004-1008, 1996
 11. **Shimizu W**, Yamada K, Arakaki Y, Kamiya T, Shimomura K: Monophasic action potential recordings during T wave alternans in congenital long QT syndrome. *Am Heart J* 132: 699-701, 1996
 12. **Shimizu W**, Kamakura S, Arakaki Y, Kamiya T, Shimomura K: T wave alternans in idiopathic long QT syndrome: Insight from body surface mapping. *PACE* 19: 1130-1133, 1996
 13. **Shimizu W**, Antzelevitch C: Sodium channel block with mexiletine is effective in reducing dispersion of repolarization and preventing torsade de pointes in LQT2 and LQT3 models of the long QT syndrome. *Circulation* 96: 2038-2047, 1997
 14. **Shimizu W**, Kamakura S, Kurita T, Suyama K, Aihara N, Shimomura K: Influence of epinephrine, propranolol and atrial pacing on spatial distribution of recovery time measured by body surface mapping in congenital long QT syndrome. *J Cardiovasc Electrophysiol* 8: 1102-1114, 1997
 15. **Shimizu W**, Kurita T, Inagaki M, Suyama K, Aihara N, Kamakura S, Kosakai Y, Isobe F, Shimomura K: Electrophysiological changes of arrhythmogenic substrate following Maze procedure in patients with lone and paroxysmal atrial fibrillation. *Jpn Circ J* 61: 988-996, 1997
 16. **Shimizu W**, Kurita T, Matsuo K, Suyama K, Aihara N, Kamakura S, Towbin J A, Shimomura K: Improvement of repolarization abnormalities by a K⁺ channel opener in the LQT1 form of congenital long QT syndrome. *Circulation* 97: 1581-1588, 1998

17. **Shimizu W**, Antzelevitch C: Cellular basis for the electrocardiographic features of the LQT1 form of the long QT syndrome. Effects of β adrenergic agonists, antagonists and sodium channel blockers on transmural dispersion of repolarization and torsade de pointes. *Circulation* 98: 2314-2322, 1998
18. **Shimizu W**, Antzelevitch C: Cellular and ionic basis for T wave alternans under long QT conditions. *Circulation* 99: 1499-1507, 1999
19. **Shimizu W**, MacMahon B, Antzelevitch C: Sodium pentobarbital reduces transmural dispersion of repolarization and prevents torsade de pointes in models of acquired and congenital long QT syndrome. *J Cardiovasc Electrophysiol* 10: 154-164, 1999
20. **Shimizu W**, Antzelevitch C: Cellular basis for long QT, transmural dispersion of repolarization and Torsade de Pointes in the long QT syndrome. *J Electrocardiol* 32: 177-184, 1999
21. **Shimizu W**, Antzelevitch C: Differential effects of beta-adrenergic agonists and antagonists in LQT1, LQT2 and LQT3 models of the long QT syndrome. *J Am Coll Cardiol* 35: 778-786, 2000
22. **Shimizu W**, Antzelevitch C: Effects of a K^+ channel opener to reduce transmural dispersion of repolarization and prevent Torsade de Pointes in LQT1, LQT2 and LQT3 models of the long-QT syndrome. *Circulation* 102: 706-712, 2000
23. **Shimizu W**, Matsuo K, Takagi M, Tanabe Y, Aiba T, Taguchi A, Suyama K, Kurita T, Aihara N, Kamakura S: Body surface distribution and response to drugs of ST segment elevation in the Brugada syndrome: Clinical implication of 87-leads body surface potential mapping and its application to 12-leads electrocardiograms. *J Cardiovasc Electrophysiol* 11: 396-404, 2000
24. **Shimizu W**, Antzelevitch C, Suyama K, Kurita T, Taguchi A, Aihara N, Takaki H, Sunagawa K, Kamakura S: Effect of sodium channel blockers on ST segment, QRS duration, and corrected QT interval in patients with Brugada syndrome. *J Cardiovasc Electrophysiol* 11: 1320-1329, 2000
25. **Shimizu W**: Editorial comment, T wave alternans: From cell to clinical. *J Cardiovasc Electrophysiol* 12: 428-430, 2001
26. **Shimizu W**, Aiba T, Kurita T, Kamakura S: Paradoxical abbreviation of repolarization in epicardium of the right ventricular outflow tract during augmentation of Brugada-type ST segment elevation. *J Cardiovasc Electrophysiol* 12: 1418-1421, 2001
27. **Shimizu W**, Kamakura S: Catecholamines in children with congenital long QT syndrome and Brugada syndrome. *J Electrocardiol* 34: 173-175, 2001
28. **Shimizu W**, Tanabe Y, Aiba T, Inagaki M, Kurita T, Suyama K, Nagaya N, Taguchi A, Aihara N, Sunagawa K, Nakamura K, Ohe T, Towbin J A, Priori S G, Kamakura S: Differential effects of β -blockade on dispersion of repolarization in absence and presence of sympathetic stimulation between LQT1 and LQT2 forms of congenital long QT syndrome. *J Am Coll Cardiol* 39: 1984-1991, 2002
29. **Shimizu W**, Satomi K, Kamakura S: Visualization of activation and repolarization in congenital long QT syndrome. *Heart* 88: 190, 2002
30. **Shimizu W**: Effects of sympathetic stimulation on various repolarization indices in the congenital long QT syndrome. *Ann Noninvasive Electrocardiol* 4: 332-342, 2002
31. **Shimizu W**, Noda T, Takaki H, Kurita T, Nagaya N, Satomi K, Suyama K, Aihara N, Kamakura S, Echigo S, Nakamura K, Sunagawa K, Ohe T, Towbin J A, Napolitano C, Priori S G: Epinephrine unmasks latent mutation carriers with LQT1 form of congenital long QT syndrome. *J Am Coll Cardiol* 41: 633-642, 2003
32. **Shimizu W**: Genotype-specific clinical manifestation in long QT syndrome.

- Expert Review of Cardiovascular Therapy* 1: 401-409, 2003
33. **Shimizu W**: Editorial comment, Gender difference and drug challenge in Brugada syndrome. *J Cardiovasc Electrophysiol* 15: 70-71, 2004
 34. **Shimizu W**, Noda T, Takaki H, Nagaya N, Satomi K, Kurita T, Suyama K, Aihara N, Sunagawa K, Echigo S, Miyamoto Y, Yoshimasa Y, Nakamura K, Ohe T, Towbin J A, Priori S G, Kamakura S: Diagnostic value of epinephrine test for genotyping LQT1, LQT2 and LQT3 forms of congenital long QT syndrome. *Heart Rhythm* 1: 276-283, 2004
 35. **Shimizu W**, Horie M, Ohno S, Takenaka K, Yamaguchi M, Shimizu M, Washizuka T, Aizawa Y, Nakamura K, Ohe T, Aiba T, Miyamoto Y, Yoshimasa Y, Towbin J A, Priori S G, Kamakura S: Mutation site-specific differences in arrhythmic risk and sensitivity to sympathetic stimulation in LQT1 form of congenital long QT syndrome - Multi-center study in Japan -. *J Am Coll Cardiol* 44: 117-125, 2004
 36. **Shimizu W**, Aiba T, Antzelevitch C: Specific therapy based on the genotype and cellular mechanism in inherited cardiac arrhythmias. - Long QT syndrome and Brugada syndrome -. *Curr Pharm Design* 11: 1561-1572, 2005
 37. **Shimizu W**: The long QT syndrome: Therapeutic implications of a genetic diagnosis. *Cardiovasc Res* 67: 347-356, 2005
 38. **Shimizu W**, Aiba T, Kamakura S: Mechanisms of disease: current understanding and future challenges in Brugada syndrome. *Nat Clin Pract Cardiovasc Med* 2, 408-414, 2005
 39. **Shimizu W**: Acquired forms of the Brugada syndrome. *J Electrocardiol* 38 Suppl:22-25, 2005
 40. **Shimizu W**: The Brugada syndrome. - An update -. *Internal Med* 44: 1224-1231, 2005
 41. **Shimizu W**: Editorial comment. Does an overlap syndrome really exist between Brugada syndrome and progressive cardiac conduction defect (Lenegre syndrome)? *J Cardiovasc Electrophysiol* 17: 276-278, 2006
 42. Bezzina CR*, **Shimizu W***, Yang P*, Koopmann TT, Tanck MWT, Miyamoto Y, Kamakura S, Roden DM, Wilde AAM: A common sodium channel promoter haplotype in Asian subjects underlies variability in cardiac conduction. *Circulation* 113: 338-344, 2006 * These 3 authors equally contributed
 43. **Shimizu W**, Matsuo K, Kokubo Y, Satomi K, Kurita T, Noda T, Nagaya N, Suyama K, Aihara N, Kamakura S, Inamoto N, Akahoshi M, Tomoike H: Sex hormone and gender difference. - Role of testosterone on male predominance in Brugada syndrome. *J Cardiovasc Electrophysiol* 18: 415-421, 2007
 44. **Shimizu W**, Aiba T, Kamakura S: Mechanism and new findings in the Brugada syndrome. *Circ J* 71: (Suppl A) A32-A39, 2007
 45. **Shimizu W**: Editorial Commentary. Proarrhythmic effect of altered ventricular activation sequence in patients with permanent pacemaker. *Heart Rhythm* 4: 1487-1488, 2007
 46. Moss AJ*, **Shimizu W***, Wilde AAM*, Towbin JA*, Zareba Z, Robinson JL, Qi M, Vincent GM, Ackerman MJ, Kaufman ES, Hofman N, Seth R, Kamakura S, Miyamoto Y, Goldenberg I, Andrews ML, McNitt S: Clinical aspects of type-1 long-QT syndrome by location, coding type, and biophysical function of mutations involving the KCNQ1 gene. *Circulation* 115:2481-2489, 2007 * **These 4 authors equally contributed**
 47. **Shimizu W**: Genetics of congenital long QT syndrome and Brugada syndrome. *Future Cardiology* 4: 379-389, 2008
 48. **Shimizu W**: Clinical impact of genetic studies in lethal inherited cardiac

- arrhythmias. *Circ J* 72: 1926-1936, 2008
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