

# Stanford

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## Tara I. Chang, MD, MS, FASN

Assistant Professor of Medicine (Nephrology) at the Stanford University Medical Center

Medicine - Nephrology

### CLINICAL OFFICES

- **Nephrology Clinic**

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### ACADEMIC CONTACT INFORMATION

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### Bio

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#### BIO

Tara Chang, MD, MS is a board-certified nephrologist who enjoys taking care of patients with all types of kidney diseases. She is also a certified Hypertension Specialist, and has a particular interest in treating patients with high blood pressure. In addition to her patient care duties, Dr. Chang maintains an active clinical research program, which focuses on studying cardiovascular disease in patients with chronic kidney disease. She has received grant funding from the National Institutes of Health and the American Heart Association.

Dr. Chang speaks conversational Mandarin. She enjoys jogging, yoga, and spending time with her husband, son and twin daughters.

#### CLINICAL FOCUS

- Nephrology
- hypertension
- chronic kidney disease
- dialysis

#### ACADEMIC APPOINTMENTS

- Assistant Professor - Med Center Line, Medicine - Nephrology
- Member, Cardiovascular Institute

#### ADMINISTRATIVE APPOINTMENTS

- Director of Clinical Research, Stanford Division of Nephrology, (2016- present)

#### PROFESSIONAL EDUCATION

- Residency: University of California San Francisco Internal Medicine Residency (2006) CA
- Fellowship: Stanford University Division of Nephrology (2009) CA
- Board Certification: Nephrology, American Board of Internal Medicine (2009)

- Medical Education: University of Michigan Health System (2003) MI

## LINKS

- Kidney Clinical Research: <http://med.stanford.edu/kidneyresearch.html>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

As a board-certified nephrologist, I see first-hand the pervasiveness of cardiovascular disease in patients with chronic kidney disease (CKD). As a trained epidemiologist and clinical researcher, I also see the lack of evidence available to guide treatment decision-making in CKD. Motivated by these evidence gaps, my research seeks to clarify questions about cardiovascular care in patients with CKD. My research specifically focuses on issues such as blood pressure control, coronary revascularization, and the comparative effectiveness of cardioprotective medications in patients with CKD, with the long-term goal of improving outcomes in these high-risk patients.

## Publications

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### PUBLICATIONS

- **Intensive Blood Pressure Targets and Kidney Disease.** *Clinical journal of the American Society of Nephrology : CJASN*  
Chang, T. I., Sarnak, M. J.  
2018
- **Antihypertensive medication withholding practices in hemodialysis: A survey study of patients and providers.** *Hemodialysis international. International Symposium on Home Hemodialysis*  
Haase, S. B., Chang, S., Schiller, B., Chertow, G. M., Chang, T. I.  
2018
- **Associations of Glycemic Control With Cardiovascular Outcomes Among US Hemodialysis Patients With Diabetes Mellitus.** *Journal of the American Heart Association*  
Rhee, J. J., Zheng, Y., Montez-Rath, M. E., Chang, T. I., Winkelmayer, W. C.  
2017; 6 (6)
- **Comparative effectiveness of angiotensin receptor blockers vs. angiotensin-converting enzyme inhibitors on cardiovascular outcomes in patients initiating peritoneal dialysis** *JOURNAL OF NEPHROLOGY*  
Shen, J. I., Saxena, A. B., Montez-Rath, M. E., Leng, L., Chang, T. I., Winkelmayer, W. C.  
2017; 30 (2): 281-288
- **Drug-Eluting Stents Versus Bare Metal Stents for Percutaneous Coronary Intervention in Kidney Transplant Recipients** *TRANSPLANTATION*  
Lenihan, C. R., Montez-Rath, M. E., Winkelmayer, W. C., Chang, T. I.  
2017; 101 (4): 851-857
- **Balancing the Evidence: How to Reconcile the Results of Observational Studies vs. Randomized Clinical Trials in Dialysis** *SEMINARS IN DIALYSIS*  
Shen, J. I., Lum, E. L., Chang, T. I.  
2016; 29 (5): 342-346
- **Antihypertensive Medication Use in Older Patients Transitioning from Chronic Kidney Disease to End-Stage Renal Disease on Dialysis.** *Clinical journal of the American Society of Nephrology*  
Chang, T. I., Zheng, Y., Montez-Rath, M. E., Winkelmayer, W. C.  
2016; 11 (8): 1401-1412
- **Comparative effectiveness of angiotensin receptor blockers vs. angiotensin-converting enzyme inhibitors on cardiovascular outcomes in patients initiating peritoneal dialysis.** *Journal of nephrology*  
Shen, J. I., Saxena, A. B., Montez-Rath, M. E., Leng, L., Chang, T. I., Winkelmayer, W. C.  
2016: -?
- **The Association Between Antihypertensive Medication Nonadherence and Visit-to-Visit Variability of Blood Pressure** *HYPERTENSION*  
Kronish, I. M., Lynch, A. I., Oparil, S., Whittle, J., Davis, B. R., Simpson, L. M., Krousel-Wood, M., Cushman, W. C., Chang, T. I., Muntner, P.

2016; 68 (1): 39-?

- **Angiotensin-converting enzyme inhibitor/angiotensin receptor blocker use and cardiovascular outcomes in patients initiating peritoneal dialysis.** *Nephrology, dialysis, transplantation : official publication of the European Dialysis and Transplant Association - European Renal Association*  
Shen, J. I., Saxena, A. B., Montez-Rath, M. E., Chang, T. I., Winkelmayer, W. C.  
2016
- **Drug-Eluting Versus Bare-Metal Stents During PCI in Patients With End-Stage Renal Disease on Dialysis** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY*  
Chang, T. I., Montez-Rath, M. E., Tsai, T. T., Hlatky, M. A., Winkelmayer, W. C.  
2016; 67 (12): 1459-1469
- **Drug-Eluting Versus Bare-Metal Stents During PCI in Patients With End-Stage Renal Disease on Dialysis.** *Journal of the American College of Cardiology*  
Chang, T. I., Montez-Rath, M. E., Tsai, T. T., Hlatky, M. A., Winkelmayer, W. C.  
2016; 67 (12): 1459-1469
- **The effects of cinacalcet on blood pressure, mortality and cardiovascular endpoints in the EVOLVE trial** *JOURNAL OF HUMAN HYPERTENSION*  
Chang, T. I., AbdAlla, S., London, G. M., Block, G. A., Correa-Rotter, R., Drueeke, T. B., Floege, J., Herzog, C. A., Mahaffey, K. W., Moe, S. M., Parfrey, P. S., Wheeler, D. C., Dehmel, et al  
2016; 30 (3): 204-209
- **Patterns and Correlates of Baseline Thiazide-Type Diuretic Prescription in the Systolic Blood Pressure Intervention Trial** *HYPERTENSION*  
Chang, T. I., Evans, G., Cheung, A. K., Cushman, W. C., Diamond, M. J., Dwyer, J. P., Huan, Y., Kitzman, D., Kostis, J. B., Oparil, S., Rastogi, A., Roumie, C. L., Sahay, et al  
2016; 67 (3): 550-555
- **Sleep disordered breathing and cardiovascular risk in older patients initiating dialysis in the United States: a retrospective observational study using medicare data** *BMC NEPHROLOGY*  
Tuohy, C. V., Montez-Rath, M. E., Turakhia, M., Chang, T. I., Winkelman, J. W., Winkelmayer, W. C.  
2016; 17
- **Visit-to-visit variability of blood pressure and death, end-stage renal disease, and cardiovascular events in patients with chronic kidney disease** *JOURNAL OF HYPERTENSION*  
Chang, T. I., Tabada, G. H., Yang, J., Tan, T. C., Go, A. S.  
2016; 34 (2): 244-252
- **Coffee and caffeine consumption and the risk of hypertension in postmenopausal women** *AMERICAN JOURNAL OF CLINICAL NUTRITION*  
Rhee, J. J., Qin, F., Hedlin, H. K., Chang, T. I., Bird, C. E., Zaslavsky, O., Manson, J. E., Stefanick, M. L., Winkelmayer, W. C.  
2016; 103 (1): 210-217
- **Medication adherence and visit-to-visit variability of systolic blood pressure in African Americans with chronic kidney disease in the AASK trial** *JOURNAL OF HUMAN HYPERTENSION*  
Hong, K., Muntner, P., Kronish, I., Shilane, D., Chang, T. I.  
2016; 30 (1): 73-78
- **Comparative outcomes of predominant facility-level use of ferumoxytol versus other intravenous iron formulations in incident hemodialysis patients** *NEPHROLOGY DIALYSIS TRANSPLANTATION*  
Airy, M., Mandayam, S., Mitani, A. A., Chang, T. I., Ding, V. Y., Brookhart, M. A., Goldstein, B. A., Winkelmayer, W. C.  
2015; 30 (12): 2068-2075
- **Outcomes After Warfarin Initiation in a Cohort of Hemodialysis Patients With Newly Diagnosed Atrial Fibrillation.** *American journal of kidney diseases*  
Shen, J. I., Montez-Rath, M. E., Lenihan, C. R., Turakhia, M. P., Chang, T. I., Winkelmayer, W. C.  
2015; 66 (4): 677-688
- **Classifying individuals based on a densely captured sequence of vital signs: An example using repeated blood pressure measurements during hemodialysis treatment** *JOURNAL OF BIOMEDICAL INFORMATICS*  
Goldstein, B. A., Chang, T. I., Winkelmayer, W. C.  
2015; 57: 219-224
- **Longer-term Outcomes of Darbeipoetin Alfa Versus Epoetin Alfa in Patients With ESRD Initiating Hemodialysis: A Quasi-experimental Cohort Study** *AMERICAN JOURNAL OF KIDNEY DISEASES*  
Winkelmayer, W. C., Chang, T. I., Mitani, A. A., Wilhelm-Leen, E. R., Ding, V., Chertow, G. M., Brookhart, M. A., Goldstein, B. A.

2015; 66 (1): 106-113

- **Coronary artery bypass graft type and outcomes in maintenance dialysis.** *journal of cardiovascular surgery*  
Shilane, D., Hlatky, M. A., Winkelmayer, W. C., Chang, T. I.  
2015; 56 (3): 463-471
- **Association of Spontaneous Bleeding and Myocardial Infarction With Long-Term Mortality After Percutaneous Coronary Intervention** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY*  
Kazi, D. S., Leong, T. K., Chang, T. I., Solomon, M. D., Hlatky, M. A., Go, A. S.  
2015; 65 (14): 1411-1420
- **Visit-to-Visit Variability of Systolic Blood Pressure and Cardiovascular Disease** *CURRENT HYPERTENSION REPORTS*  
Hussein, W. F., Chang, T. I.  
2015; 17 (4)
- **Correlates and outcomes of warfarin initiation in kidney transplant recipients newly diagnosed with atrial fibrillation.** *Nephrology, dialysis, transplantation : official publication of the European Dialysis and Transplant Association - European Renal Association*  
Lenihan, C. R., Montez-Rath, M. E., Shen, J. I., Scandling, J. D., Turakhia, M. P., Chang, T. I., Winkelmayer, W. C.  
2015; 30 (2): 321-329
- **Thienopyridine use after coronary stenting in low income patients enrolled in medicare part D receiving maintenance dialysis.** *Journal of the American Heart Association*  
Chang, T. I., Montez-Rath, M. E., Shen, J. I., Solomon, M. D., Chertow, G. M., Winkelmayer, W. C.  
2014; 3 (5)
- **Thienopyridine use after coronary stenting in low income patients enrolled in medicare part D receiving maintenance dialysis.** *Journal of the American Heart Association*  
Chang, T. I., Montez-Rath, M. E., Shen, J. I., Solomon, M. D., Chertow, G. M., Winkelmayer, W. C.  
2014; 3 (5)
- **Acute Kidney Injury After CABG Versus PCI: An Observational Study Using 2 Cohorts.** *Journal of the American College of Cardiology*  
Chang, T. I., Leong, T. K., Boothroyd, D. B., Hlatky, M. A., Go, A. S.  
2014; 64 (10): 985-994
- **The Association of Gender to Cardiovascular Outcomes After Coronary Artery Revascularization in Patients With End-Stage Renal Disease** *CLINICAL CARDIOLOGY*  
Krishnaswami, A., Chang, T. I., Jang, J. J., Leong, T. K., Go, A. S.  
2014; 37 (9): 546-551
- **Beta-blocker therapy and cardiac events among patients with newly diagnosed coronary heart disease.** *Journal of the American College of Cardiology*  
Andersson, C., Shilane, D., Go, A. S., Chang, T. I., Kazi, D., Solomon, M. D., Boothroyd, D. B., Hlatky, M. A.  
2014; 64 (3): 247-252
- **Temporal trends in mortality after coronary artery revascularization in patients with end-stage renal disease.** *The Permanente journal*  
Krishnaswami, A., Leong, T. K., Hlatky, M. A., Chang, T. I., Go, A. S.  
2014; 18 (3): 11-16
- **Comparative Effectiveness of Clopidogrel in Medically Managed Patients With Unstable Angina and Non-ST-Segment Elevation Myocardial Infarction.** *Journal of the American College of Cardiology*  
Solomon, M. D., Go, A. S., Shilane, D., Boothroyd, D. B., Leong, T. K., Kazi, D. S., Chang, T. I., Hlatky, M. A.  
2014; 63 (21): 2249-2257
- **Near-Term Prediction of Sudden Cardiac Death in Older Hemodialysis Patients Using Electronic Health Records** *CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*  
Goldstein, B. A., Chang, T. I., Mitani, A. A., Assimes, T. L., Winkelmayer, W. C.  
2014; 9 (1): 82-91
- **Visit-to-visit systolic blood pressure variability and outcomes in hemodialysis** *JOURNAL OF HUMAN HYPERTENSION*  
Chang, T. I., Flythe, J. E., Brunelli, S. M., Muntner, P., Greene, T., Cheung, A. K., Chertow, G. M.  
2014; 28 (1): 18-24

- **Contemporary Incidence, Predictors, and Outcomes of Acute Kidney Injury in Patients Undergoing Percutaneous Coronary Interventions** *JACC-CARDIOVASCULAR INTERVENTIONS*  
Tsai, T. T., Patel, U. D., Chang, T. I., Kennedy, K. F., Masoudi, F. A., Matheny, M. E., Kosiborod, M., Amin, A. P., Messenger, J. C., Rumsfeld, J. S., Spertus, J. A.  
2014; 7 (1): 1-9
- **Incremental prognostic information from kidney function in patients with new onset coronary heart disease** *AMERICAN HEART JOURNAL*  
Hlatky, M. A., Shilane, D., Chang, T. I., Boothroyd, D., Go, A. S.  
2014; 167 (1): 86-92
- **Multivessel coronary revascularization and outcomes in kidney transplant recipients.** *Transplant international*  
Lenihan, C. R., Montez-Rath, M. E., Winkelmayer, W. C., Chang, T. I.  
2013; 26 (11): 1080-1087
- **Use and safety of heparin-free maintenance hemodialysis in the USA** *NEPHROLOGY DIALYSIS TRANSPLANTATION*  
Shen, J. I., Mitani, A. A., Chang, T. I., Winkelmayer, W. C.  
2013; 28 (6): 1589-1602
- **Association of Intradialytic Blood Pressure Variability With Increased All-Cause and Cardiovascular Mortality in Patients Treated With Long-term Hemodialysis** *AMERICAN JOURNAL OF KIDNEY DISEASES*  
Flythe, J. E., Inrig, J. K., Shafi, T., Chang, T. I., Cape, K., Dinesh, K., Kunaparaju, S., Brunelli, S. M.  
2013; 61 (6): 966-974
- **Comparative effectiveness of multivessel coronary bypass surgery and multivessel percutaneous coronary intervention: a cohort study.** *Annals of internal medicine*  
Hlatky, M. A., Boothroyd, D. B., Baker, L., Kazi, D. S., Solomon, M. D., Chang, T. I., Shilane, D., Go, A. S.  
2013; 158 (10): 727-734
- **Comparative effectiveness of coronary artery bypass grafting and percutaneous coronary intervention for multivessel coronary disease in a community-based population with chronic kidney disease.** *American heart journal*  
Chang, T. I., Leong, T. K., Kazi, D. S., Lee, H. S., Hlatky, M. A., Go, A. S.  
2013; 165 (5): 800-808 e2
- **Risk Factors for ESRD in Individuals With Preserved Estimated GFR With and Without Albuminuria: Results From the Kidney Early Evaluation Program (KEEP)** *AMERICAN JOURNAL OF KIDNEY DISEASES*  
Chang, T. I., Li, S., Chen, S., Peralta, C. A., Shlipak, M. G., Fried, L. F., Whaley-Connell, A. T., McCullough, P. A., Tamura, M. K.  
2013; 61 (4): S4-S11
- **Effectiveness of beta-Blockers in Heart Failure With Left Ventricular Systolic Dysfunction and Chronic Kidney Disease** *JOURNAL OF CARDIAC FAILURE*  
Chang, T. I., Yang, J., Freeman, J. V., Hlatky, M. A., Go, A. S.  
2013; 19 (3): 176-182
- **Comparative Effectiveness Research in Heart Failure Therapies Women, Elderly Patients, and Patients with Kidney Disease** *HEART FAILURE CLINICS*  
Shah, R. U., Chang, T. I., Fonarow, G. C.  
2013; 9 (1): 79-?
- **Multivessel Coronary Artery Bypass Grafting Versus Percutaneous Coronary Intervention in ESRD** *JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*  
Chang, T. I., Shilane, D., Kazi, D. S., Montez-Rath, M. E., Hlatky, M. A., Winkelmayer, W. C.  
2012; 23 (12): 2042-2049
- **Preoperative Statin Use and Postoperative Acute Kidney Injury** *AMERICAN JOURNAL OF MEDICINE*  
Brunelli, S. M., Waikar, S. S., Bateman, B. T., Chang, T. I., Lii, J., Garg, A. X., Winkelmayer, W. C., Choudhry, N. K.  
2012; 125 (12): 1195-?
- **Comparative effectiveness research: what is it and why do we need it in nephrology?** *NEPHROLOGY DIALYSIS TRANSPLANTATION*  
Chang, T. I., Winkelmayer, W. C.  
2012; 27 (6): 2156-2161
- **Use of Secondary Prevention Medications among Adults with Reduced Kidney Function** *CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*

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- Chang, T. I., Gao, L., Brown, T. M., Safford, M. M., Judd, S. E., McClellan, W. M., Limdi, N. A., Muntner, P., Winkelmayer, W. C.  
2012; 7 (4): 604-611
- **Blood Pressure Components and End-stage Renal Disease in Persons With Chronic Kidney Disease The Kidney Early Evaluation Program (KEEP)** *ARCHIVES OF INTERNAL MEDICINE*  
Peralta, C. A., Norris, K. C., Li, S., Chang, T. I., Tamura, M. K., Jolly, S. E., Bakris, G., McCullough, P. A., Shlipak, M.  
2012; 172 (1): 41-47
  - **Systolic Blood Pressure and Mortality in Patients on Hemodialysis** *CURRENT HYPERTENSION REPORTS*  
Chang, T. I.  
2011; 13 (5): 362-369
  - **Chronic Kidney Disease and Cardiovascular Therapeutics Time to Close the Evidence Gaps** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY*  
Chang, T. I., Chertow, G. M.  
2011; 58 (11): 1162-1164
  - **Angiotensin-converting enzyme inhibitors and cardiovascular outcomes in patients on maintenance hemodialysis** *AMERICAN HEART JOURNAL*  
Chang, T. I., Shilane, D., Brunelli, S. M., Cheung, A. K., Chertow, G. M., Winkelmayer, W. C.  
2011; 162 (2): 324-330
  - **Angiotensin Converting Enzyme Inhibitors in Hemodialysis**  
Chang, T. I., Shilane, D., Brunelli, S. M., Cheung, A. K., Chertow, G. M., Winkelmayer, W. C.  
WILEY PERIODICALS, INC.2011: S15-S15
  - **Intradialytic Hypotension and Vascular Access Thrombosis** *JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*  
Chang, T. I., Paik, J., Greene, T., Desai, M., Bech, F., Cheung, A. K., Chertow, G. M.  
2011; 22 (8): 1526-1533
  - **Kidney Function and Long-Term Medication Adherence after Myocardial Infarction in the Elderly** *CLINICAL JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY*  
Chang, T. I., Desai, M., Solomon, D. H., Winkelmayer, W. C.  
2011; 6 (4): 864-869
  - **Systolic blood pressure and mortality in prevalent haemodialysis patients in the HEMO study** *JOURNAL OF HUMAN HYPERTENSION*  
Chang, T. I., Friedman, G. D., Cheung, A. K., Greene, T., Desai, M., Chertow, G. M.  
2011; 25 (2): 98-105
  - **Blood Pressure Control in Type 2 Diabetes Mellitus** *AMERICAN JOURNAL OF KIDNEY DISEASES*  
Chang, T. I., Cheung, A. K., Chertow, G. M.  
2010; 56 (6): 1029-1031
  - **Updated comorbidity assessments and outcomes in prevalent hemodialysis patients** *HEMODIALYSIS INTERNATIONAL*  
Chang, T. I., Paik, J., Greene, T., Miskulin, D. C., Chertow, G. M.  
2010; 14 (4): 478-485
  - **Kidney Disease and Antihypertensive Medication Adherence: The Need for Improved Measurement Tools** *AMERICAN JOURNAL OF KIDNEY DISEASES*  
Chang, T. I., Winkelmayer, W. C.  
2010; 56 (3): 423-426
  - **Kidney Disease, Hospitalized Hypertension, and Cardiovascular Events: Cause or Consequence?** *CIRCULATION*  
Chertow, G. M., Chang, T. I.  
2010; 121 (20): 2160-2161
  - **GFR estimating equations, CKD prevalence and the public health** *JOURNAL OF INTERNAL MEDICINE*  
Chang, T. I., Chertow, G. M.  
2010; 267 (4): 354-356
  - **Oxidant regulation of gene expression and neural tube development: Insights gained from diabetic pregnancy on molecular causes of neural tube defects** *DIABETOLOGIA*  
Chang, T. I., Horal, M., Jain, S. K., Wang, F., Patel, R., Loeken, M. R.  
2003; 46 (4): 538-545
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- **Evidence that elevated glucose causes altered gene expression, apoptosis, and neural tube defects in a mouse model of diabetic pregnancy** *DIABETES*  
Fine, E. L., Horal, M., Chang, T. I., Fortin, G., Loeken, M. R.  
1999; 48 (12): 2454-2462
- **Genotoxicity and diabetic embryopathy: Impaired expression of developmental control genes as a cause of defective morphogenesis** *SEMINARS IN REPRODUCTIVE ENDOCRINOLOGY*  
Chang, T. I., Loeken, M. R.  
1999; 17 (2): 153-165