

# Professor Saumya Das: my experience on cardiology disease and views on it in China

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## Introduction

During 2016 Shanghai University International Forum on Biomedicine (Cardiovascular Disease): from Basic Research to Clinic Study, *Annals of Translational Medicine (ATM)* has the honor to interview Prof. Saumya Das.

Prof. Das (Figure 1) finished college, medical school and graduate school at Harvard Medical School, and graduated with an MD-PhD in 2000. He completed his training in internal medicine, cardiovascular sciences and clinical electrophysiology at Massachusetts General Hospital, where he was on staff from 2007–2011. He was then at Beth Israel Deaconess Medical Center as the Co-director of the Cardiovascular Genetics Center and ran an active research program on RNA biomarkers for heart failure and arrhythmias.

Now, he is the co-director of the Resynchronization and Advanced Cardiac Therapeutics Program at MGH. His research focuses on understanding mechanisms of arrhythmias in heart failure, discovering new tests to provide better identification of patients at risk of developing heart failure or arrhythmias, and uncovering new therapies to treat heart failure.

## Interview

**ATM:** Could you please make a brief self-introduction to our audiences?

**Prof. Das:** My name is Saumya Das, and I am both a clinical cardiac electrophysiologist and a translational research scientist at Massachusetts General Hospital and Harvard Medical School. I have a research lab that investigates extracellular RNAs as biomarkers of heart diseases that play a functional role in disease pathogenesis.

**ATM:** What is the role of microRNA-30d in the response to cardiac resynchronization therapy in heart failure?

**Prof. Das:** In our initial study published in 2015 in



Figure 1 Prof. Saumya Das.

Circulation, we found that baseline levels of mirRNA-30d in patients who are undergoing cardiac resynchronization therapy are correlated with their echocardiographic response at 6 months. So the baseline levels predict how well the heart remodels in response to CRT. Using animal models and cell culture systems, we also found that mirRNA-30d plays an important cardiac protective role.

**ATM:** What is the major discovery in your recent research on blood markers that can predict heart failure?

**Prof. Das:** Our most recent largest study is using next generation sequencing to identify extracellular RNAs in the plasma that can predict cardiac remodeling after myocardial infarction. We found a signature of microRNAs that was associated with LV remodeling as measured by cardiac MRI, which is known as a very sensitive signature of cardiac remodeling. And the other interesting finding was that there were other small non-coding RNAs that were also differently expressed between patients with beneficial or adverse remodeling. We are now exploring the possible functional role for these circulating microRNAs and other non-coding RNAs, in cardiac remodeling

in the post MI heart.

**ATM:** *Could you share your experience on heart disease with the junior doctors or researchers?*

**Prof. Das:** I did my PhD in neuroscience, and for my clinical training I entered into cardiology and cardiac electrophysiology. This was a time of exciting progress in advancing therapy for patients with cardiovascular diseases (the biggest contributor to world-wide mortality), but with significant gaps in knowledge in fundamental mechanisms of heart disease. I saw a great opportunity to combine clinical or translational research with basic research to translate bedside observations to the bench.

**ATM:** *Any comments on the development of cardiology in China*

**Prof. Das:** Sure, it is clear that there are really important and interesting papers that are coming out in cardiovascular biology from Chinese scientists. I had the chance to visit Shanghai University two years ago and meet some of the

students in Dr. Junjie Xiao's laboratory and talk about some of their projects. It is really nice to see that some of these projects now have been published in pretty good journals and the work is progressing nicely. You know in two years since I have been here, the increasing number of young people interested in cardiovascular research, and the quality of the science is very encouraging. There is a great opportunity for collaborations that leverage some of the unique resources in China and an enthusiastic, young group of scientists hungry for success.

### Acknowledgements

None.

### Footnote

*Conflicts of Interest:* The author has no conflicts of interest to declare.

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