

The Beat



AUSTRALIAN
HEART RESEARCH
beating heart disease

Edition 1 2015



Leading Research to Mend Broken Hearts – Takotsubo



Professor John Horowitz and his team want to ensure the right treatments are available for patients with TTC to improve their lives.

Takotsubo Cardiomyopathy, also known as ‘Broken-Heart Syndrome’ and ‘Stress Cardiomyopathy’, is becoming more commonly diagnosed in Australia as knowledge about the condition grows.

Takotsubo Cardiomyopathy (TTC) is a weakening of the left ventricle, the heart’s main pumping chamber, usually as the result of severe emotional or physical stress, such as a sudden illness, the loss of a loved one, a serious accident, or a natural disaster such as an earthquake.

TTC is hard to diagnose and there is currently no established treatment.

The symptoms of TTC are similar to those of a heart attack; chest pain and shortness of breath. When people suffering TTC are hooked up to an ECG, the heart trace looks similar to someone with a heart attack.

For these reasons TTC is often misdiagnosed as a heart attack, but researchers have illustrated that there is a need to assess these patients more closely to decipher if they have experienced a heart attack, or in fact TTC.

“When a TTC patient has an angiogram (an X-ray of the coronary arteries), we usually see no coronary artery disease or blockages, which are typical with a heart attack,” said researcher, Dr Ha Nguyen.

“However if we image the left ventricle we can see abnormal contractions and a ballooning – which indicates TTC.”

This is a relatively new finding.

Under the expert leadership of Professor John Horowitz, researchers at the Basil Hetzel Institute for Translational Health Research (BHI) in Adelaide have been investigating TTC since 2005.

♥ Judy’s Story

Judy Myers considered herself a very fit person.

Through previously owning her own gym, coaching athletes at the Institute of Sport in Canberra and leading an active lifestyle, she is someone who understands what fitness is and the benefits it brings.

So when the 54-year-old from Henley Beach in South Australia started suffering from regular chest pain episodes, she was shocked.

“Four years ago I was walking up the hill from the car park to my office one morning when I suddenly felt severe chest pain,” recalled Judy.

“From that day on whenever I exerted myself I would get the chest pains – in my jaw, down my arm, they were excruciating.”

Judy underwent a myriad of tests confirming that the condition she was experiencing was known as Cardiac Syndrome X. For people like Judy, surgical intervention is not an option, because the problem cannot be visualised. Treatment options are limited.

“I was frustrated, I couldn’t even run around the backyard with my dog without really major chest pains. Going from being very active to being extremely debilitated in everything I did was really hard.”



Judy Myers.

continued next page

Leading Research to Mend Broken Hearts - TaKotsubo

continued from page 1



Dr Nguyen says it's important to correctly diagnose and develop appropriate treatments for people with TTC.

The group has also developed a unique animal model of TTC which will significantly assist with research into the pathways and mechanisms of the disease and developing effective treatments. One of the issues with misdiagnosis of TTC as a heart attack is that people are getting incorrect treatment which is ineffective or in some cases, harmful.

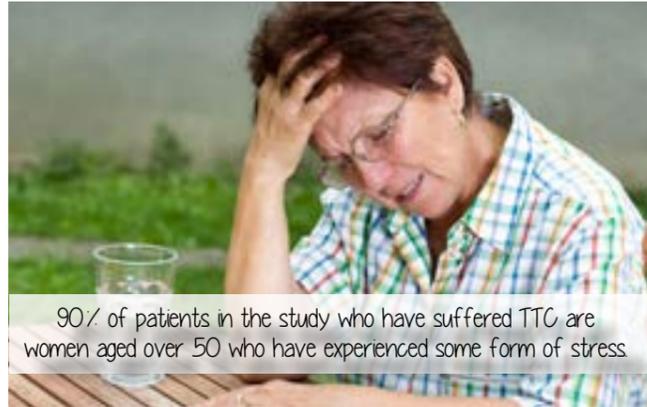
"The recurrence rate of TTC for those who have already had an attack is about 11 per cent, and we are becoming more aware of just how common the condition is, not just in Australia but around the world. We need to make sure we have the right treatments available."

To read the full version of this story please visit www.australianheartresearch.com.au ♥

Over that time the research team has recruited a large group of TTC patients and is leading the way in research aimed at improving diagnosis of TTC, and developing treatments.

Dr Ha Nguyen said about 90 per cent of patients in the study who have suffered TTC are women over the age of 50, who have experienced some physical or emotional stress.

Dr Nguyen has found through her research that blood levels of a hormone secreted by the heart are much higher in patients with TTC compared to those suffering a heart attack. This is therefore an important diagnostic tool.



90% of patients in the study who have suffered TTC are women aged over 50 who have experienced some form of stress.

♥ Judy's Story...

continued from page 1

In 2011, Judy was referred to see Professor John Beltrame, Professor of Medicine at The Queen Elizabeth Hospital (TQEH), and a leading cardiologist. At his suggestion, Judy began taking a drug which works by slowing down the heart rate. For Judy, it helped.

"I could do some exercise without getting chest pain. I was getting my life back to a certain extent.

But in mid-2014, this medicine had to be ceased due to unexpected side effects reported in an overseas study.

"I'd fallen down a flight of stairs in January breaking quite a few bones, so I wasn't very active at the time anyway."

After recuperating for about three months Judy soon decided she wanted to get back to the gym.

"I noticed no matter what I did I wasn't getting any chest pain. I started getting my heart rate up to 172bpm without any pain. I couldn't believe it."

Judy's experience has been an inspiration for Professor John Beltrame and Dr Kanchani Rajopadhyaya, who commenced a trial at TQEH in early 2014 which is

investigating exercise as a therapy for people suffering with Non-obstructive Coronary Artery Disease (NCAD). Cardiac Syndrome X falls under this category of conditions.

"We are undertaking this trial to find out if regular exercise actually reduces the number of chest pain episodes a person experiences and ultimately, improve quality of life for these people," explained Prof Beltrame.

Since recommencing regular exercise, Judy's fitness and attitude has made a marked improvement.

"I get a lot of energy from exercise so I feel happier. Life looks a lot brighter."

"But I am fearful of it coming back so I don't push myself too hard. I'll start to run on the beach with my dog and I'll be wondering... will today be the day it comes back?"

"For that reason I think medical research is really important. There's nothing worse than suffering from something that can't be explained. Research is important to get an understanding of these sorts of diseases.

"Right now there are a lot of questions but not a lot of answers! It would just be really nice to know why, and I'll help the researchers in any way I can so hopefully we can find an answer for me and others like me." ♥

Improving Coronary Heart Disease Outcomes

Through improved treatments and earlier diagnosis, deaths from heart disease have reduced by almost 70 per cent over the last 40 years. However, it still remains one of Australia's biggest killers.

South Australian researchers want to improve patient outcomes for coronary heart disease sufferers and have developed a unique Australian database, modelled on best practice data collection techniques in the USA, to gather important data about the health care patients receive in the state.

Each year, around 55,000 Australians have a heart attack. This equates to one every ten minutes. Many of these patients will undergo a coronary angiogram for diagnostic purposes or interventional procedures such as the insertion of stents, Percutaneous Coronary Intervention (PCIs)

A coronary angiogram involves a special x-ray of the heart where an injection of contrast dye can help diagnose abnormalities of the heart muscle, heart valves and narrowing or blockages of the coronary arteries.

Dr Rosanna Tavella, Senior Lecturer in Medicine and Clinical Data Manager for the Central Adelaide Local Health Network has been working on the Coronary Angiogram Database of South Australia (CADOSA) Registry for over two years. Initiated by Professor John Beltrame, Cardiologist and Michell Professor of Medicine at The Queen Elizabeth Hospital (TQEH), CADOSA is a data collection registry specifically designed to gather and analyse patient data from every angiogram performed at public hospitals in SA.

The data is collected from the four public hospitals in Adelaide with cath labs (where an angiogram is performed) – the Royal Adelaide Hospital, TQEH, Flinders Medical Centre, and Lyell McEwin Hospital.

A similar program in the United States called the National Cardiovascular Data Registry which has been running for over 20 years, has served as a model framework for the development of the CADOSA registry.



AHR wants to help reduce the impact of heart disease on families through projects such as the CADOSA Registry.

"We have worked closely with the American College of Cardiology who gave us permission to use their data collection structure. It means our registry is completely compatible with the US data sets, which is certainly unique in Australia, and means we are able to benchmark our care with the very best practice worldwide," said Dr Tavella.

"Victoria is another state with an active registry and that is focused on collecting data for interventional procedures but doesn't include diagnostic cases.



Dr Rosanna Tavella says CADOSA is improving the future for patients living with heart disease.

"We have already shared some findings with the Victorian registry. This is important as sharing data creates new knowledge."

Currently, the project has 1000 patients on an additional call-back registry who are phoned one month and twelve months after their angiogram and given a questionnaire detailing changes in their health.

"We look at their quality of life, angina, even depression. We check on the patient's physical and mental functioning overall. I really enjoy this part of the project because I believe it's important to gather information from the patient's perspective, in addition to understanding their medical care," said Dr Tavella.

The questionnaire also checks improvements in chest pain and whether they're taking their medication. Its overall purpose is to ensure the treatment they are receiving is improving their health and quality of life.

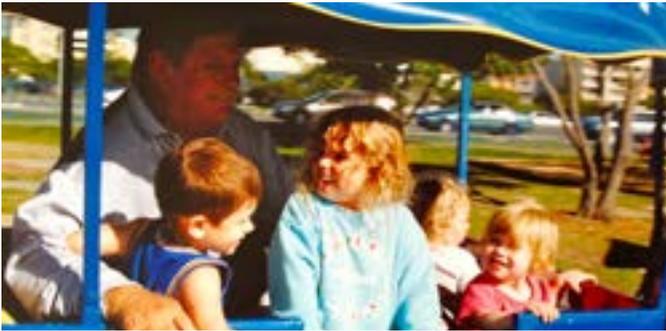
"I think future research needs to be focused on patient outcomes"

It is the patient outcomes that really make a difference. We need to translate the best outcomes as quick as possible to make a difference, and I think registries meet those requirements," said Dr Tavella.

"CADOSA really is improving and changing the lives of people with heart disease already, and the potential it has means it's an exciting project to be involved with."

To read the full version of this story please visit www.australianheartresearch.com.au ♥

Dummett Family Triathlon – In Memory of Peter



Peter's family say he loved spending time with his grandchildren and would do anything for anyone.

Two years ago, the Dummett family lost Peter, a wonderful husband, father, father-in-law and papa.

Peter was 68 when he passed away from a complicated heart condition, which he had battled with for many years.

On March 1 2015, his family participated in the Gatorade Queensland TriSeries in Raby Bay, raising over \$1,200 for Australian Heart Research (AHR) in Peter's memory.

Kathy, Peter's daughter-in-law was the key instigator of the event after being inspired to challenge herself at a leadership course in Sydney.

Healthy Heart Tip – Regular Exercise

- ♥ walking and running
- ♥ playing sport
- ♥ swimming
- ♥ playing with your kids in the park
- ♥ cycling
- ♥ taking a gym class such as aerobics or yoga

Being physically active is an important part of leading a healthy lifestyle and keeping your heart healthy.

Keeping active has a range of benefits, and the good news is that even moderate activity such as brisk walking, will benefit your health.

Australia's Physical Activity and Sedentary Behaviour Guidelines recommends that you include at least 30 minutes or more of moderate-intensity physical activity every day of the week or at a minimum, most days of the week for health benefits.

This information is for educational purposes only. It is not a substitute for individual health advice provided by your doctor or cardiologist (heart specialist).

"I discovered that I needed to make a goal and stick to it – my fitness had been declining so I decided I was going to do a triathlon and declared it to the whole family," she said.

"My sister-in-law Amanda was quite inspired by my decision, so she jumped on board and the whole family followed suit.

"We then decided we should do it for a cause – and what better way to remember Peter than by raising money for heart research.

"If we can contribute to medical research that will help other families in the future, then that's pretty special."

Kathy developed a training manual for the eight family participants, which included Peter's four teenage grandchildren.

After eight weeks of preparation, they were ready for the 200 metre swim, 5 kilometre bike ride and 2 kilometre run, which they all completed in under an hour.

"Peter had been encouraged by his doctors to keep his weight down and his preferred exercise was swimming, cycling and walking – so the triathlon was quite a perfect option for us," Kathy explained.

"My husband John came second on the day, which was pretty exciting!"

The Dummett family know that Peter would be so proud of their achievements and felt that he was there with them in spirit on the day.

"One part of his condition was that he had an enlarged heart and this was so true for Peter – he did have the biggest heart and would do anything for anyone. Everyone adored him and he is well and truly missed.

"We have been truly amazed by the support of our family and friends who donated to our cause and in memory of Peter – we've decided we are going to make it an annual event!" ♥



The Dummett family offspring felt that Peter was there in spirit during the triathlon on March 1 2015.