Bringing Research to LIFE

Upcoming Events

Café Scientifique

Oral Health: More than bad breath!

Tuesday, November 1, 2011
at 7:00 p.m.

McNally Robinson Booksellers
1120 Grant Avenue

FREE ADMISSION
EVERYONE WELCOME

To assist us in planning seating, RSVP to:
(204) 474-9020

My Research Tools (MRT) demonstrations

A brief hands-on demonstration to assist researchers with updating their public profile data

FINAL DEMONSTRATION on
Monday, November 7, 2011
12:30 p.m. - 1:30 p.m.

Bannatyne Campus
Rm 231, NJM Health Sciences Library

All attendees entered to WIN A PRIZE!

The RSC Governor General Lecture Series Presents:

We are all Treaty People: Accepting the Queen's Hand

Professor James Miller, FRSC

Thursday, November 10, 2011
at 2:30 p.m.
Rm 220, University Centre

Reception to follow from
4:00 pm - 5:00 pm
Rm 224, University Centre

ALL ARE WELCOME

For more info contact:
Brent Deere
at (204) 474-8697

Heart Remodeling

Photo by Rob Blaich

Dr. Davinder Jassal discusses the outcomes of a University of Manitoba study that shows signs of favourable heart remodeling in obstructive sleep apnea patients (OSA) on continuous positive airway pressure (CPAP).

BY MELNI GHATTORA

Do you or someone you know suffer from obstructive sleep apnea (OSA)? Did you know that OSA can negatively affect the heart?

"If you are diagnosed with OSA, following an overnight sleep study, you are a candidate for a continuous positive airway pressure (CPAP) machine," explains Jassal, an associate professor of Medicine, Radiology and Physiology in the Faculty of Medicine, University of Manitoba and principal investigator at St-Boniface General Hospital Research Centre.

"The CPAP device basically throws a lot of air flow down into the lungs to keep them open at night, allowing you to have a restful night so that you don't feel tired or fatigue during the daytime hours."

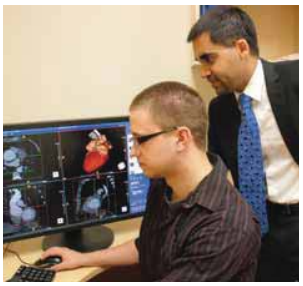

Photo by Rob Blaich

Jassal and Matt Lytwyn, Lab Technician, reviewing a cardiac CT using post processing.

A study conducted by Jassal and a team of 11 researchers, including colleague and professor of Medicine at the University of Manitoba, Dr. Sat Sharma, is the first study of its kind to use blood tests, echocardiography (ultrasound of the heart) and MRI of the heart to evaluate cardiac changes in patients with OSA on CPAP therapy over a one year period. The research findings were prepublished online in August 2011 by CHEST, the official publication of the American College of Chest Physicians.

Sleep apnea is a sleep disorder that affects 5-10 per cent of Canadians. There exists numerous predisposing factors for developing OSA. Some of the most common risk factors include male sex, obesity, large neck circumference (>16 inches in women and >17 inches in men), use of alcohol and/or sedatives, and smoking.

"What happens in OSA patients is that in the middle of the night you stop breathing for a period of 15 to 30 seconds, you snore heavily, and the oxygen levels in your body tend to drop," explains Jassal. "With the oxygen levels dropping, there are surges of high blood pressure that cause stress on the heart, ultimately causing it to thicken over time."

Between 2007 and 2010, the team followed 47 patients with OSA at St. Boniface General Hospital.

"What we wanted to do was use blood tests, echocardiography and MRI of the heart to see if people with OSA on CPAP therapy would demonstrate an improvement in the ability of the heart to relax with regression in wall thickness," says Jassal.

Patients had to comply with the study which required them to use their CPAP machine every night for a minimum of four hours over the course of a year. Each of the CPAP devices contained a chip that would record usage date, allowing Jassal to confirm that patients were compliant.

"When we followed these participants for an entire year, the ultrasound and MRI of the heart showed that as early as three months, the structure of the heart favourably remodeled, he explains. "The thinner the walls, the better the ability of the heart to relax."

What prompted the idea of using MRI? According to Jassal, most patients suffering from this specific type of sleep disorder are often quite obese. "All of the previous studies have tried to determine cardiac remodeling using echocardiography (ultrasound of the heart). The major limitation of echo, however, is poor visualization of the heart due to the increased body habitus of this patient population." MRI technology, on the other hand, does not pose any challenge, as you can obtain excellent images of the heart in any patient, regardless of age or body size.

With the findings being made available publicly, "the take home point to the patient is that we now have a study done in 2011 that shows if you are compliant with CPAP therapy, your heart will remodel favourably…and there is a lower chance that in the future you will develop heart problems from the sleep apnea," says Jassal.

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