Medical Xpress

Billions of dollars at stake as Canada comes to grips with soaring heart failure costs

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Heart failure (HF) costs are headed for the economic stratosphere, even as researchers come up with simple tests and strategies to bring them back to earth.

An assessment of the growing problem and a new initiative to curb costs and increase efficacy in dealing with heart failure patients when they present to emergency departments were the subject of two major studies presented at the Canadian Cardiovascular Congress 2011, co-hosted by the Heart and Stroke Foundation and the Canadian Cardiovascular Society.

Approximately half a million Canadians have heart failure. Ten per cent or 50,000 of those patients will have advanced heart failure with a 50 per cent chance of surviving one year. The number of patients living with heart failure is on the rise because more people are surviving heart attacks thanks to improved diagnosis and treatment.

According to Dr. Debbie Feldman of the faculty of medicine and the school of rehabilitation at the University of Montreal, the role played by the hospital emergency department (ED) is crucial in securing successful outcomes in HF treatment, both medically and economically.

In Dr. Feldman's study, which was carried out in eight Quebec hospitals, less than a third of patients who visited an emergency department for heart failure were followed up within two weeks – the time period recommended by Canadian Cardiovascular Society (CCS) guidelines.

This is very troubling, says Dr. Feldman, whose study shows, for the first time, that lack of adherence to the CCS guidelines is associated with worse outcomes.

All 551 patients in Dr. Feldman's study had a diagnosis of heart failure confirmed when they presented to the ED. Their average age was 75 years; 51 per cent were males, and 49 per cent were females.

By four weeks following discharge from the ED, 51 per cent had consulted with a physician.

Over the six month follow-up period, 25 per cent returned to the ED, and 14 per cent died.

Patients who were seen within the two week period as recommended by the CCS had fewer adverse events: they were less likely to return to the ED, be hospitalized, or die, although the result was not statistically significant.

However, the tendency to have worse outcomes, which were deemed to be more deaths, more readmissions to hospital for heart failure, or a repeat visit to the emergency department, was significantly greater in patients who were not seen by a physician until four weeks after their visit to the ED. "Patients who do not receive prompt follow up (somewhere between 2 and 4 weeks) after their ED visit are at higher risk of dying, or being readmitted to the ED or to the hospital," Dr. Feldman said.

Dr. Feldman's study also found that by six weeks, 61 per cent of patients had been seen by a physician, and by three months, 95 per cent had been seen.

"It's urgent to ensure that there is appropriate follow up for these

patients," says Dr. Blair O'Neill, president of the Canadian Cardiovascular Society. "We need to optimize adherence to these guidelines."

New simple risk score can guide admission vs. discharge decision-making

In another study, Dr. Douglas Lee, cardiologist at the Peter Munk Cardiac Centre and scientist at the Institute for Clinical Evaluative Sciences (ICES), told the meeting that it is only recently that tools have started to become available to allow physicians to make effective decisions based on acute prognosis of heart failure patients who present to the ED.

"Despite over one million visits to the ED in North America every year, we still have very little evidence to help us decide who could be discharged home and who should be admitted to hospital," Dr. Lee said.

Meanwhile, heart failure is on the rise as more people survive heart attacks and other cardiac conditions. People with heart disease are living longer and these are people who are susceptible to heart failure.

"We developed a risk score consisting of a set of simple questions and routinely available tests which we call the Emergency Heart Failure Mortality Risk Grade," Dr. Lee told the Congress.

"It is a score that can be calculated in any emergency department and could be employed anywhere around the world because it does not require any sophisticated tests," he said.

This simple clinical risk model can predict, with high accuracy, mortality among HF patients who present to the ED and may guide admission

versus discharge decision-making, he said.

Dr. Lee and his team examined 12,591 patients with acute heart failure who presented to the ED between 2004 and 2007 in Ontario.

They developed a clinical risk score that would predict the chances of a patient dying within seven days after discharge from the ED, using readily available factors.

The factors that predicted greater risk of dying within seven days included greater acuity (i.e., need for emergency medical services), even slightly elevated troponin levels, increased serum creatinine, and either high or low serum potassium. If patients developed heart failure while using Metolazone – a drug that sicker heart failure patients have to use – they were also at higher risk.

Systolic blood pressure, heart rate, and oxygen saturation were also important predictors of mortality.

When all of these risk factors were combined, Dr. Lee and his team found that patients in the highest risk group had a seven-day mortality rate of about eight per cent, meaning that for every 12 patients in the highest risk group, one of them would die within seven days.

Patients in the lowest risk group – on the contrary – had a mortality rate of about 0.3 per cent, meaning that for every 350 patients who were discharged, there would be only one death.

"This is an ongoing area of study. We haven't solved the problem yet, but it's a big step towards more evidence-based decision-making in the emergency department care of heart failure," Dr. Lee said.

"In our next phase, we're working to develop a computerized system to

calculate the score for physicians who work in the emergency department. We'd like to develop PDA and iPhone apps and other interactive technical tools in the future."

"This style of medicine is clearly going to be an important component in shaping future clinical practice," says Heart and Stroke Foundation spokesperson Dr. Beth Abramson, who adds that early diagnosis, lifestyle changes, and appropriate drug treatments can help those with heart failure lead normal and active lives and successfully manage their conditions and live longer.

Provided by Heart and Stroke Foundation of Canada

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