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**European study reveals “worrying” variations between countries and doctors in the treatment of heart failure patients.
Meta-analysis of more than 30,000 patients shows statins significantly reduce the risk of death and other complications if given before surgery.**

A Europe-wide survey has revealed significant differences between doctors in the way they treat patients with heart failure, with many physicians failing to give the best care to their patients despite the existence of recommended guidelines. The elderly are particularly at risk, with only about half of primary care physicians correctly referring those aged 65-80 with suspected heart failure to a specialist for diagnosis.

Professor Willem Remme, the first author of the study, which is published online in Europe's leading cardiology journal, the *European Heart Journal* [1] today (Wednesday 28 May), said the findings were “very worrying”.

Another study, also published online in the *EHJ* today [2], has found that if doctors gave the cholesterol-lowering drugs, statins, to patients before surgery for heart disease, the patients were significantly less likely to die or suffer other serious complications post-surgery. The first author of this study, Dr Oliver Liakopoulos, said that the meta-analysis of over 30,000 patients provided the best evidence so far of the need for intensive statin therapy before cardiac surgery, but, as less than half of cardiac surgery patients currently received the optimum pre-surgery treatment even under existing guidelines, there was an urgent need to change clinical practice.

Prof Remme, Professor of Medicine at Sticares Cardiovascular Research Foundation (Rhoon, The Netherlands), and his colleagues from the Study group on HF Awareness and Perception in Europe (SHAPE), randomly selected cardiologists, internists, geriatricians and primary care physicians from nine European countries [3] to answer questions on the diagnosis and treatment of heart failure. They received 2041 replies from cardiologists (C), 1881 from internists and geriatricians (I/G) and 2965 from primary care physicians (PCP).

“We found that despite the widespread availability of evidence-based guidelines on the management of heart failure, there were significant differences between physicians and countries,” said Prof Remme. “This was particularly apparent in the use (or lack of it) of echocardiography as a routine diagnostic tool, the prescription of ACE inhibitors and beta-blockers, the use of doses that were too low of these agents, the unsafe reliance on diuretics as a single treatment for heart failure, the use of inappropriate drugs and timings of medications.”

The researchers found that while 92% cardiologists and 71% I/Gs would use echocardiography to diagnose heart failure, 75% of PCPs would use only signs and symptoms to diagnose it. “This is concerning because if heart failure is not diagnosed correctly using echocardiography and echo-Doppler, patients may be treated wrongly, based on signs and symptoms alone, and given heart failure medication that they might not need, which could lead to untoward effects,” said Prof Remme.

Only 55% of PCPs said they would refer a patient in the typical age range for heart failure (65-80) to a specialist and only 32% would do this in those older than 80. “This is very worrying as, according to our survey, PCPs are less inclined to diagnose properly and treat heart failure correctly,” he said. “A correct diagnosis of heart failure requires objective evaluation of cardiac

function. This is particularly important in the elderly, in whom the preponderance of women and high prevalence of other illnesses make a correct diagnosis based on symptoms and signs alone even more hazardous.”

PCPs, but also I/Gs, were far less likely to prescribe ACE inhibitors and beta-blockers, and if they did, they were often at the incorrect doses. Similarly, fewer PCPs and I/Gs would prescribe spironolactone rather than digoxin for worsening symptoms, even though spironolactone has been recommended as the better treatment for some time now.

“Our finding that I/Gs report practices that frequently deviate from those recommended in guidelines is also of concern, as many patients admitted to hospital with heart failure are cared for by these specialists,” report the authors.

They said their survey made it apparent that many PCPs and I/Gs do not read the guidelines, although most are aware of their existence. Even though more cardiologists had read the guidelines, only 32% chose them as their main source of information on treatment. “I find these figures very worrying as guidelines are the only source of information which gives management advice in a complete and unbiased way, based on data from controlled studies or real expert opinion,” said Prof Remme.

He said that, while some progress has been made since guidelines were first issued in 1995, with more patients receiving appropriate treatments in the hospital setting, the SHAPE survey showed several areas for concern. “What is worrying is that, even in cardiology care, beta-blocker dosage remains on average too low. With regards to PCPs, there does not seem to have been much progress over the years in terms of how they diagnose and prescribe essential medication. Education programmes are clearly needed for both PCPs and I/Gs as these non-cardiology physicians care for many heart failure patients.”

In the second study – the largest and most complete meta-analysis to date of the effect of pre-operative statins – Dr Liakopoulos, a senior resident doctor in the Department of Cardiothoracic Surgery, University of Cologne, Germany, together with Professor Thorsten Wahlers and other colleagues, analysed 19 studies containing a total of 31,725 patients undergoing cardiac surgery. Of these, 17,201 (54.2%) were receiving statins before surgery and the rest were not.

They found that pre-operative statins reduced the absolute risk of early death from any cause by 1.5% during the early post-operative period (up to 30 days), meaning that for every 67 patients treated, one death after cardiac surgery would be avoided. Patients treated with pre-operative statins had odds of dying after surgery that were 43% lower than those who did not receive statins.

When they looked at particular events – atrial fibrillation (AF), myocardial infarction (MI), stroke and renal failure – they found a reduction of 4.3% in absolute risk of AF, meaning that patients receiving statins were 33% less likely to develop AF after surgery. Similarly, a 0.8% reduction in absolute risk of stroke was observed in the statin group, meaning that patients had odds of suffering a stroke after surgery that were 26% lower if they had received a statin before surgery than if they had not. However, statin use had no impact on postoperative MI or renal failure.

Dr Liakopoulos said that the effect on AF was probably underestimated, and recalculations that excluded two problematic trials showed that, in fact, pre-operative statins resulted in an absolute risk reduction for AF of 17%, meaning that only six patients would need to receive pre-operative statins to avoid one case of post-operative AF.

He said: "Our study is the largest meta-analysis to date to have evaluated the impact of pre-operative statin use on early adverse outcomes in patients undergoing cardiac surgery and suggests significant benefits on early post-operative outcomes in statin pre-treated patients (i.e. reduction of early all-cause mortality, stroke and atrial fibrillation).

"We strongly believe that in the absence of large randomised controlled trials (and currently none are planned) our meta-analysis gives the best clinical evidence to date for an intensive pre-operative statin treatment for all coronary artery disease patients scheduled for cardiac surgery, and it advocates the urgency for a more aggressive interdisciplinary approach between cardiologists and cardiac surgeons to provide the best pre-operative preparation for all cardiac patients scheduled for operative myocardial revascularisation.

"When you consider that only about 40-50% of heart patients admitted for cardiac surgery receive statins, and even fewer patients achieve sufficient lipid-levels prior to surgery and in compliance with existing European and American guidelines, our report underlines the need to change current clinical practice for both the cardiologist and cardiac surgeon, who are primarily responsible for providing optimal peri-operative care for our cardiac patients."

Dr Liakopoulos concluded that well-designed, multi-centre randomised controlled trials were urgently needed to answer questions that still remain about whether all patients would benefit from statin therapy (patients with or without high cholesterol levels or both), which statins were best, and what were the best doses to give and for how long.

(ends)

Notes:

[1] Awareness and perception of heart failure among European cardiologists, internists, geriatricians, and primary care physicians. *European Heart Journal*, doi:10.1093/eurheartj/ehn196

[2] Impact of preoperative statin therapy on adverse postoperative outcomes in patients undergoing cardiac surgery: a meta-analysis of over 30,000 patients. *European Heart Journal*, doi:10.1093/eurheartj/ehn198

[3] The nine countries were: France, Germany, Italy, The Netherlands, Poland, Romania, Spain, Sweden, the UK.

PDFs of the full papers are available on request from Emma Mason or are available at:
http://www.oxfordjournals.org/our_journals/eurheartj/press_releases/freepdf/ehn196.pdf
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The European Heart Journal is the flagship journal of the European Society of Cardiology (<http://www.escardio.org>). Please acknowledge the journal as a source in any articles.

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