

LETTERS TO THE EDITOR

doi:10.1093/eurjhf/hfp052

Online publish-ahead-of-print 27 April 2009

Influence of gender of physicians and patients on guideline-recommended treatment of chronic heart failure in a cross-sectional study

We read with interest the study by Baumhäkel *et al.*¹ regarding the influence of gender of physicians and gender of patients on treatment decisions in the care of congestive heart failure. This study takes the issue of gender disparities in clinical settings an important step forward, indicating that not only physician's behaviour, such as time spent per patient, is different, as shown previously,² but also that a gender effect may actually translate into differences in medical treatment.

In this study, the authors conclude that female patients are receiving inferior therapy, especially when treated by a male cardiologist. We believe that such a strong conclusion cannot decisively be made from the data presented. In observational studies such as the one presented here, it is difficult to distinguish between a direct relationship and a statistical association mediated by confounding factors. No doubt, controlled trials would not apply, randomization would be difficult to perform, and blinding even impossible. However, alternative analytical approaches for observational studies such as propensity score or instrumental variable-based analyses³ could further reduce potential confounding and may have shown different results.

The authors show that fewer female patients were receiving beta-blockers compared with men. However, such a difference was present independent of the gender of the treating physician. Why is that? Aetiologies for HF and co-morbidities differ significantly between male and female patients. Coronary artery disease (CAD) prevalence was significantly higher in men, whereas diastolic heart failure may have been more prevalent in women. This 'double indication' of CAD and HF likely explains, at least in part, the higher rate of beta-blocker treatment in male patients.

The authors also observed that patients treated by male physicians received beta-blockers less frequently. However, the proportion of patients with CAD treated by male physicians was somewhat lower in general, which may explain part of that phenomenon.

Most critically, this study makes no assertions regarding clinical outcomes of patients as stratified by gender. In fact, as the authors mention, several studies have shown that female patients with congestive heart failure actually have more favourable outcomes than male patients.^{4,5} Given this reality, it becomes difficult to assert, as the authors do, that female patients are receiving inferior treatment—if that were the case, would their survival really be superior?

Certainly, there is room for confounding in this study with regard to the influence of patient or physician gender on treatment, and with regard to a gender interaction effect. Given all of these issues, we consider the statement by the authors that 'A female patient was likely to receive the worst medical treatment from a male physician ...' to be inflammatory and unsupported by the evidence presented in this manuscript.

Conflicts of interest: none declared.

References

1. Baumhäkel M, Müller U, Böhm M. Influence of gender of physicians and patients on guideline-recommended treatment of chronic heart failure in a cross-sectional study. *Eur J Heart Fail* 2009;**11**:299–303.
2. Roter DL, Hall JA, Aoki Y. Physician gender effects in medical communication: a meta-analytic review. *JAMA* 2002;**288**:756–764.
3. Stukel TA, Fisher ES, Wennberg DE, Alter DA, Gottlieb DJ, Vermeulen MJ. Analysis of observational studies in the presence of treatment selection bias: effects of invasive cardiac management on AMI survival using propensity score and instrumental variable methods. *JAMA* 2007;**297**:278–285.
4. Hudson M, Rahme E, Behloul H, Sheppard R, Pilote L. Sex differences in the effectiveness of angiotensin receptor blockers and angiotensin converting enzyme inhibitors in patients with congestive heart failure—a population study. *Eur J Heart Fail* 2007;**9**:602–609.
5. O'Meara E, Clayton T, McEntegart MB, McMurray JJ, Pina IL, Granger CB, Ostergren J, Michelson EL, Solomon SD, Pocock S, Yusuf S, Swedberg K, Pfeffer MA. Sex differences in clinical characteristics and prognosis in a broad spectrum of patients with heart failure: results of the Candesartan in Heart failure. Assessment of Reduction in Mortality and morbidity (CHARM) program. *Circulation* 2007;**115**: 3111–3120.

Pascal Meier

Department of Internal Medicine
University of Michigan and VA Ann Arbor Health
Care System
Ann Arbor, MI
USA
Tel: +1 734 615 3878
Email: pmeier@med.umich.edu

Claire S. Duvernoy

Department of Internal Medicine
University of Michigan and VA Ann Arbor Health
Care System, Cardiology Section
2215 Fuller Road, Box111a
Ann Arbor
MI 48105, USA
Tel: +1 734 845 5450
Fax: +1 734 214 0691
Email: duvernoy@umich.edu

doi:10.1093/eurjhf/hfp056

Online publish-ahead-of-print 27 April 2009

Influence of gender of physicians and patients on guideline-recommended treatment of chronic heart failure in a cross-sectional study: reply

We thank Drs Duvernoy and Meier for their comments on our study.¹ Evaluation of the influence of physicians' gender on quality of medical treatment is difficult to perform. You are right with the suggestion that controlled trials cannot be applied to this question. Thus, we chose an observational survey with all of its disadvantages. However, we tried to consider the possible confounders in the multivariate analysis. Nevertheless, we think that there might be an influence of physicians' gender on medical treatment of chronic heart failure in the population evaluated. Furthermore, there could be country-specific differences in health care systems or even education of physicians. Therefore, we suggest that similar studies should be performed in different countries and health care systems, because our results will not necessarily be valid in other countries.

Prescription of beta-blockers might be biased by higher prevalence of coronary