



# Adherence to guidelines for treatment of chronic heart failure

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## Abstract

### Background

Chronic heart failure (CHF) is one of the most frequent diagnoses of inpatients in Germany and one of the major causes of death. A number of studies have shown that a therapy according to evidence-based guidelines is associated with reduced mortality and morbidity and may improve health related quality of life. The aim of the present study is to investigate differences in diagnosis and treatment of heart failure on the basis of the nationwide population based claims data. The analysis focuses on the guidelines' recommendations referring to relevant indicators like specific medication, echocardiography and influenza vaccination status.

### Methods

The database included (i) the complete nationwide outpatient claims data of the panel doctors services according to §295 SGB V and (ii) the nationwide outpatient drug prescription data according to §300 para. 2 SGB V, both from 2009. For the indication-based pharmaceutical analyses both data sets were merged at the patient level. Main attention was drawn to patients with documented left heart failure (ICD-10 I50.1-). Patients with heart failure not otherwise specified (ICD-10 I50.9) were used for comparison purposes.

### Results

With regard to drugs prescribed we found sex- and age-related differences in patients with left heart failure. In general, male patients were treated more extensively according to the national guidelines than female patients. 79.4% of the male patients compared with 71.4% of the female patients received prescriptions of ACE inhibitors or AT1 antagonists. The gender-related differences were more pronounced concerning

the treatment with beta blockers (men 70.5%, women 61.8%) and the combination therapy of ACE inhibitors or AT1 antagonists combined with beta blockers (men 61.2%, women 49.6%). In addition, regional variations of drug prescription showed slight differences between the old and the new federal German states (East vs. West: ACE inhibitors or AT1 antagonists 80.7% vs. 76.1%; beta blockers 70.4% vs. 65.8%; ACE inhibitors or AT1 antagonists and beta blockers 60.4% vs. 54.9%). Co-treatment by family physicians and cardiologists reduced the differences leading to an increase of the combination therapy of 20% to 25%.

Pronounced regional variations were found for the use of echocardiography with generally higher rates in urban areas. Thus, in patients where left heart failure was suspected echocardiography was used as diagnostic tool more often than in the federal states of Hamburg (75%) and Berlin (65%) and ranged between 35% and 50% in the remaining regions.

### Conclusion

Evidence-based clinical guidelines actually strongly support medical decision making. Although such guidelines do not represent templates, they are systematically developed tools serving with the implementation of good clinical practice. They represent orientation guide in the context of individual medical care for the patients' health problems. However, the age-, gender- and region-related differences with regard to diagnosis and treatment of heart failure raise the question, whether patient centered medical care can be further improved as is intended through the use of physicians' clinical guidelines.