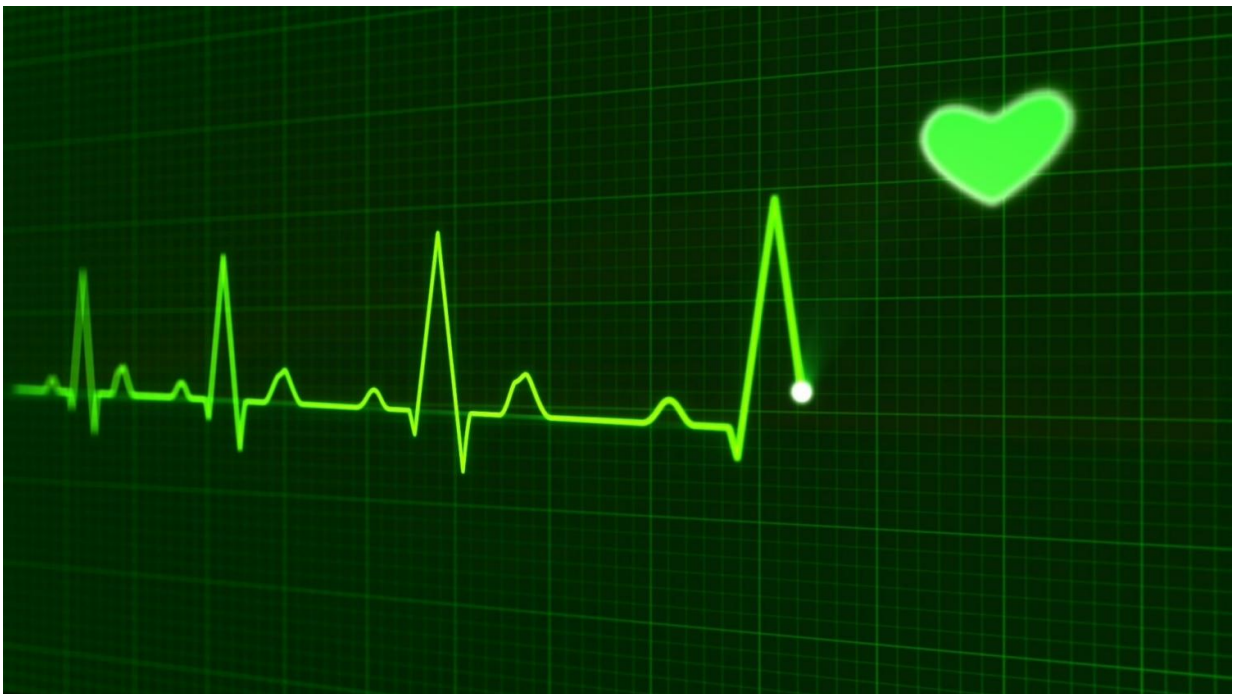


Heart failure medication often prescribed in insufficient doses

October 1 2019, by Johannes Angerer



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Important medications for the treatment of heart failure are often prescribed in lower dosages than recommended by international guidelines. A study with the participation of the Medical University of Vienna shows overly cautious prescription of the most common medication groups by treating physicians due to unintentional bias. The results are published in the journal *Annals of Internal Medicine*.

Heart failure is one of the most frequent diseases in western countries. Angiotensin converting enzyme (ACE)-inhibitors, betablockers and [angiotensin receptor blockers](#) (ARB), which have clear guidelines on prescription practice, are used for treatment. A joint study of the Medical University of Vienna and experts of the study group for [heart failure](#) of the Austrian Cardiology Society under the guidance of Thomas Stefenelli examined the dosages prescribed to outpatients based on the national Austrian Heart Failure Registry comprising 3,737 patients.

During an observation period of 12 months, only a limited number of the patients with chronic systolic heart failure received the recommended maximal dosages. Most patients were distinctly below the recommended optimal therapeutic dosage. This became particularly clear within a substance class with different numerical maximum dosages to achieve the same [therapeutic effect](#). Thus, medication with a higher target dosage in absolute numbers (e.g. betablocker 10mg vs 200mg) were prescribed at a significantly lower dosage than recommended, while the probability that the maximum target dosage was prescribed was considerably greater in medication with a lower numerical target dosage.

Martin Hülsmann, cardiologist at the Medical University of Vienna, who contributed substantially to the study together with her colleague Henrike Arfsten, says unconscious cognitive bias is responsible: "We find an unconscious fear of overdosing and a fear of side effects of medication among our colleagues, which continues to exist also in evidence-based medicine. This is particularly relevant the greater the target dosage of a pharmaceutical product, and prevents the administration of the dosage tested as optimal in pivotal studies."

Hülsmann assumes that this overly cautious behavior is not a particular problem of cardiological treatments, but that this overcautiousness in the dosage of prescription also exists in other medical sectors. "We would

like to see further studies that trace this bias in other medical specialties and diseases."

As a first step, the authors of the study therefore suggest checking these results in larger patient groups and other diseases. If the results are confirmed, the authors recommend supplementing the guideline recommendations based on milligram dosages with guidelines based on equivalence dosages. Prescription of the correct and tested [medication](#) dosage is important to achieve the intended therapeutic effect and to provide patients with the best possible quality of life, in this case relating to [heart](#) failure.

More information: Henrike Arfsten et al. Prescription Bias in the Treatment of Chronic Systolic Heart Failure, *Annals of Internal Medicine* (2019). [DOI: 10.7326/M19-0476](https://doi.org/10.7326/M19-0476)

Provided by Medical University of Vienna

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