

Beta-blockers and the criteria of SIRS

I read with interest the article by Stoeckle and colleagues [1]. A number of the participants had hypertension and heart disease. Beta-blockers might be administered for such disorders in the non-diabetics. Lower heart rate would be expected among patients on the prescribed drug. Since tachycardia is one of the criteria in the systemic inflammatory response syndrome (SIRS), failure to be aware of beta-blockers usage could lead to an underestimation of the incidence of SIRS and subsequently the incidence of true bloodstream infections in the non-diabetics.

Reference

- 1 Stoeckle M, Kaech C, Trampuz A, Zimmerli W. The role of diabetes mellitus in patients with bloodstream infections. *Swiss Med Wkly.* 2008;138(35-36):512-9.

Correspondence:
Weekitt Kittisupamongkol
Hua Chiew Hospital
Bangkok 10100
Thailand
weekitti@gmail.com

Authors' reply

We appreciate the comment of W. Kittisupamongkol regarding our study on "The role of diabetes mellitus in patients with bloodstream infections". He points out that the use of beta-blockers may influence the diagnosis of true bloodstream infection in non-diabetic patients, and possibly introduce a bias in the selection of our cases.

We are not aware of any publication dealing with the impact of beta-blockers on the diagnostic sensitivity of sepsis (SIRS). However, since in our study only two out of four SIRS criteria were required as inclusion criteria, the false exclusion of bacteraemic patients because of blocking the heart rate below 90/min is very low.

Two out of three concomitant diseases which are potential indications for the treatment with beta-blockers, namely hypertension and ischaemic heart disease were more frequent in the group of diabetics as compared to the non-diabetics (54.9% vs 30.6%, and 25.4% vs 17.1%, respectively). In patients with isolated hypertension, beta-blocking agents are nowadays rarely used in both, diabetics and non-diabetics. In contrast, patients with coronary heart disease are treated with beta-blockers regardless of whether they are diabetics or not. Since cardioselective beta-blocking agents have little effect on insulin release or the awareness of hypoglycaemia, these agents are not con-

traindicated in diabetics. According to published data, 70-80% of patients receive beta-blockers after acute myocardial infarction [1]. Similarly, we estimate that in our hospital >70% of the patients with diagnosed ischaemic heart disease are treated with beta-blockers. Thus, at least 18% of the diabetics and 12% of the non-diabetics with sepsis were treated with beta-blocking agents. Therefore, the use of beta-blockers would underestimate the incidence of true bloodstream infection in diabetics, not in non-diabetics. This would even strengthen our conclusion that diabetics have a higher risk of bloodstream infection.

Reference

- 1 Daugherty SL, Ho PM, Spertus JA, Jones PG, Bach RG, Krumholz HM, Peterson ED, Rumsfeld JS, Msoudi FA. Association of early follow-up after acute myocardial infarction with higher rates of medication use. *Arch Intern Med.* 2008; 168:485-91.

Correspondence:
Prof. Dr. med. Werner Zimmerli
Medizinische Universitätsklinik
Rheinstrasse 26
CH-4410 Liestal
werner.zimmerli@unibas.ch

Abbreviation

SIRS systemic inflammatory response syndrome.