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European Renal Association -
European Dialysis and Transplant Association

Beta-blockade: A fundamental intervention in hypertensive haemodialysis patient

28 February 2014

Notwithstanding the public health relevance of hypertension in chronic kidney disease and the peculiar risk profile of the end stage kidney disease (ESKD) population, the number of randomized controlled trials (RCTs) testing antihypertensive drugs in ESKD patients on dialysis is very limited indeed. A meta-analysis performed in 2009 identified only eight relatively small randomized trials testing antihypertensive agents in dialysis patients and three of these trials were aimed at treating heart disease rather than hypertension. After this meta-analysis, the OCTOPUS trial was published in NDT in 2013. Thus, all in all, until now just six trials testing anti-hypertensive medication in dialysis patients with hypertension have been published so far.

Sparse observations in ESKD indicate that propranolol is very effective for the treatment of drug-resistant hypertension in haemodialysis patients and that supervised administration of atenolol following haemodialysis produces a marked reduction (-17/-11 mmHg) in Ambulatory Blood Pressure Monitoring (ABPM), the golden standard technique for measuring BP. Beta-blockers are superior to other antihypertensive drug classes for secondary prevention in hypertensive and normotensive patients with a history of coronary heart disease. These drugs and ACEi rank as the most used anti-hypertensive agents in ESKD and it is therefore important to know their comparative effectiveness in this population. **Rajiv Agarwal and colleagues report in the March issue of NDT the very first study to make a head-to-head comparison of a beta-blocker (atenolol) with an ACEi (lisinopril), the Hypertension in Haemodialysis Patients Treated with Atenolol or Lisinopril (HDPAL) study, a trial in which the primary endpoint was regression of LVH.** This trial was recently presented at the 2013 ASN Congress in Atlanta. After a 12-month treatment period with atenolol or with lisinopril-based regimens, hypertensive patients achieved a similar fall in 44-h interdialysis ABPM (-21/-13 mmHg; -18/-10 mmHg, respectively). Nonetheless, the risk for hospitalizations for heart failure and cardiovascular events including myocardial infarction, stroke and cardiovascular death was markedly higher in the lisinopril than in the atenolol group. Overall, the incidence rate ratio for major cardiovascular events was more than double in the lisinopril than



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in the atenolol group, and the independent safety monitoring board recommended an early stop of the trial. Findings in this study are coherent with a large meta-analysis in patients with a history of cardiovascular events comparing 37 beta-blocker trials with an equal number of trials based on other anti-hypertensive agents. Overall, the HDPAL study provides strong support for the use of beta-blockers as first line agents in hypertensive haemodialysis patients.

Rajiv Agarwal and colleagues, together with the National Institute of Diabetes and Digestive and Kidney Diseases that funded this industry-independent trial, should be commended for producing important clinical information which may inform clinical practice in haemodialysis patients. Beta-blockade emerges as a fundamental intervention in hypertensive haemodialysis patients, a population with marked sympathetic overactivity and a much unfavourable cardiovascular prognosis.

About ERA-EDTA

With more than 6,600 members, the ERA-EDTA ("European Renal Association – European Dialysis and Transplant Association") is one of the biggest nephrology associations worldwide and one of the most important and prestigious European Medical Associations. It supports basic and clinical research in the fields of clinical nephrology, dialysis, renal transplantation and related subjects. The ERA-EDTA supports a number of studies as well as research groups and has founded a special "Fellowship Programme" for young investigators as well as grant programmes. In order to involve young nephrologists in all activities of the ERA-EDTA the Council decided to create a Young Nephrologists' Platform (YNP). Besides, it has established various research networks and different working groups to promote the collaboration of nephrologists with other medical disciplines (e.g. cardiology, immunology). Furthermore, a "European Renal Best Practice" (ERBP) advisory board has been established by the ERA-EDTA to draw up and publish guidelines and position statements. Another important goal of the ERA-EDTA is education: several series of CME-courses as well as the annual congress offer an attractive scientific programme to cover the need of continuous medical education for doctors working in the fields of nephrology, dialysis and transplantation. The association's journals, NDT (Nephrology, Dialysis, Transplantation) and CKJ (Clinical Kidney Journal), are currently the leading nephrology journals in Europe. The ERA-EDTA Registry is a large epidemiologic database comparing countries by assessing nephrology practice throughout Europe. Finally, ERA-EDTA is member of the European Kidney Health Alliance (EKHA), a consortium of renal societies that actively interacts with the European Parliament. For more information please visit www.era-edta.org