Administrative databases and quality management in clinical routine care - validating the present and influencing the future

S. König¹,², K. Mouratis², C. Schanner², S. Hohenstein², G. Hindricks¹, A. Bollmann¹,²

¹. Herzzentrum Leipzig, Rhythmologie, Deutschland
². Leipzig Heart Institute GmbH, Digital, Deutschland

Einleitung und Fragestellung

Demographic changes, rising numbers of patients and steadily emerging new treatment options led to major changes in cardiovascular clinical care in recent years. In this context, not all relevant scientific questions can be adequately and timely answered by randomized controlled trials. In addition, the results generated in sophisticated study designs cannot always be transferred to routine practice. Other types of studies examining relevant clinical endpoints are needed to pursue the goal of an evidence-based therapy. Therefore, aim of this investigation was to prove that the use of administrative data is feasible, provides sufficient information on relevant outcome measurements and is hypothesis-generating for future studies, helping to improve medical care in the special context of inpatient treatment of patients with cardiac arrhythmias.

Material und Methoden

We retrospectively investigated administrative data of the years 2010 to 2018 for 85 German Helios hospitals to build up two registries of inpatient cases with different rhythm disorders. Inclusion criteria consisted of age and predefined codes of main and secondary diagnoses at hospital discharge as well as performed procedures using ICD-10- and OPS-codes.¹ Specific ICD-10-codes were validated as tracers for existing comorbidities and to calculate clinical scores (e.g. CHA²DS²-VASc-Score) by comparison with data of electronic health records. Several combinations of encoded diagnoses and procedures were used to detect treatment-related adverse events. Data on the type of hospital admission and discharge including in-hospital mortality rate were recorded.
Ergebnisse

The first registry included 161,502 patient cases with atrial fibrillation or atrial flutter. Covering a relevant proportion of the German population with atrial arrhythmias, the registry was able to provide characteristics of patients who underwent several treatment strategies. Regional differences in the use of invasive procedures and center-volume-associated complication rates were measured. In-hospital mortality was calculated with its changes within the inclusion period and relevant predictors were identified, with center-volume turning out to influence patient's outcome significantly. The second registry directly referred to patients who underwent a specific arrhythmia-related invasive procedure and therefore included 5,052 patients with ventricular arrhythmias. Outcome measurements of catheter ablation procedures for two different patient groups were compared and predictors of in-hospital mortality assessed in concordance to the other registry. Interestingly, the type of hospital assignment also had an impact on the patient’s outcome which offers interesting approaches for future studies.

Diskussion

Use and processing of administrative data is feasible for the investigation and timely analysis of large patient cohorts. Several limitations must be taken into account when interpreting this type of data, especially biases resulting from the quality of encoding, missing information as well as the retrospective and non-causal nature of data analysis. Nevertheless, corresponding to the comparison with other studies with similar results, valid data on various questions can be obtained. In particular for well-defined endpoints such as specific adverse events or in-hospital death in which miscoding is unlikely, analysis of administrative data is useful and allows up-to-date performance measurement of clinically relevant endpoints in a real-world setting which may contribute to quality management programs and towards value-based healthcare.

Literaturangaben


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