ABSTRACT: Methodological Considerations for the Implementation of a European Mandated Retrospective Drug Utilisation Study (DUS) to Investigate the Use of Dexmedetomidine (Dexdor®) in Clinical Practice

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Objectives:
Dexmedetomidine was approved for ICU sedation in adults in the EU in 2011, but has been available in other countries since 1999 and used in many different clinical situations including in children. This study evaluated off-label use of dexmedetomidine in usual care in the EU.

Methods:
A chart review DUS of patients treated with dexmedetomidine was conducted in 16 hospitals across Austria, Finland, Germany and Poland. Patients were identified either prospectively or retrospectively, with anonymised data abstraction performed retrospectively post-administration. Chart data on patient demographics, indication, dexmedetomidine administration, concomitant medications and therapeutic effectiveness were collected via an electronic data collection tool.

Results:
2000 patients received 2159 administrations of which 36.6% contained elements not according to the SmPC. Collecting off-label use was a concern to some sites and ethics committees, resulting in high site attrition and relatively slow start-up. Collecting sufficient mature dexmedetomidine use early after launch required focus on prolific users, while excluding regions where dexmedetomidine uptake was slow. Site selection was performed blinded by the Steering Committee to avoid bias. The study required
collaboration across many hospital departments. Varied medical records systems required site-specific approaches to patient identification; some sites performing database searches, others using a manual process. Restricted access to records of patients from other hospital departments in some cases necessitated completion of paper worksheets by non-study hospital staff. Anonymised data collection avoided the need for informed consent but precluded patient verification and data queries, thus robust electronic data checks were essential. Data were regularly reviewed for evidence of duplication of patients within sites.

Conclusions:

Chart review DUS was successful in investigating off-label dexmedetomidine prescribing. Study conduct flexibility was essential to meet different needs of study sites and ensure study success. Close attention to potential sources of bias was required to ensure a robust outcome.