Abstract: P4161

Oral anticoagulation in 13,344 adult patients with congenital heart disease (ACHD) in a longitudinal real-world setting in 2005-2017

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Background:
The life-span of patients with congenital heart disease strongly increased during the last decades due to advances in diagnostic and therapeutic approaches. Some cardiac malformations may involve an increased risk of thrombo-embolic complications. Further, adult patients with congenital heart disease (ACHD) are at increased risk to develop cardiac arrhythmia, such as atrial flutter or fibrillation. Therefore, various constellations may indicate anti-thrombotic and/or anti-coagulative preventive or therapeutic regimen. Concomitantly, progress was made in the development of anticoagulative pharmacotherapy in the last decade with the development of the novel oral anticoagulants (NOACs).

Purpose:
Aim of the study is to assess the use of oral anticoagulants, particularly of the NOACs dabigatran, rivaroxaban, apixaban, and edoxaban in ACHD in an unselected real-world scenario.

Methods:
Data are derived from the German BARMER health insurance comprising approx. 9 million insurants. Within the years 2005 - 2017, we identified all adult patients that were hospitalized with a main or secondary diagnosis of a congenital heart disease by ICD-10 (Q20-28). Patients were categorized into simple, moderate, and high complexity cardiac lesions of heart disease. Oral anticoagulants were identified by ATC codes and assigned to the patient if prescribed at least twice.

Results:
Overall, we included 13,344 ACHD patients (137,079 patient years). The use of oral anticoagulants increased from 8.3% in 2005, to 13.1% in 2010, 19.8% in 2015 and up to 22.5% of patients in 2017. Correspondingly, the use of vitamin K antagonists increased, reaching a plateau at approx. 14% since 2012. More interestingly, however, the prescription of NOACs constantly increased from 1.6% in 2012 to 8.4% in 2017. Therefore, NOACs were used for anticoagulation in 37% (n=802) of ACHD patients in 2017. Among those treated with NOACs, apixaban was used in 44.1% of patients, compared to rivaroxaban in 38.5%, edoxaban in 10.5% and dabigatran in 6.9%. With regard to heart disease complexity, oral anticoagulation was used in 21% ACHD with simple defects (1,065 of 5,080 patients), 19% of ACHD with moderate complexity disease (430 of 2,296), and 30% in complex ACHD patients (644 of 2,138). NOACs were applied to 6.2% of simple ACHD patients, 7.7% of ACHD patients with moderate complexity disease and 14.6% of complex ACHD patients.

Figure: In 2017, 22.5% of ACHD (2,139) were anticoagulated. Thereof, Vit K ant. were used in 62.5%, apixaban in 16.5% and rivaroxaban in 14.4%.

Conclusion:
Over 20% of ACHD patients require anticoagulation in the current era. Interestingly, despite the lack of prospective studies increasingly NOACs are replacing vitamin K antagonists in the ACHD population. In 2017
NOACs accounted for 37% of all anticoagulated patients in our study. The use of NOACs was not restricted to simple lesions but up to 30% of complex ACHD patients received NOACs in the current era.