Effects on reduction of morbidity and mortality in ACHD population of childbearing age as a result of ESC Guidelines

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Introduction: Cardiovascular disease remains the leading cause of maternal death during pregnancy and peripartum period. ACHD is a rising cause for maternal cardiovascular complications. Several studies demonstrated the beneficial role of systematic maternal cardiovascular risk assessment culminating in the European Society of Cardiology guidelines in 2018 endorsing the use of the modified World Health Organization (mWHO) classification to stratify maternal risk and further guide surveillance and management of women with underlying cardiac conditions.

Purpose: In this study we aim to reduce maternal cardiovascular morbidity risks by actively implementing recommendations from the 2018 ESC guidelines for the management of cardiovascular diseases in women with ACHD in childbearing age in Grampian region, Scotland.

Methods: We identified women of childbearing age (n = 204) in the ACHD population of NHS Grampian (n = 594). We initially calculated baseline percentage of ACHD women who had pre-pregnancy counselling, documented mWHO risk assessment and, if applicable, contraception advice and pregnancy rate. This population has been prospectively followed up during the period from 2020 to 2022 and ESC guidelines were implemented. By the end of the follow up period we assessed the changes in the pregnancy rate in ACHD women.

Results: Overall, the population of ACHD women of childbearing age in Grampian region has significantly grown (expanded) during the study period (from n = 204 to n = 230) and the vast majority (90.5%) of these patients are diagnosed with mWHO class I (38.3%, ESC mild ACHD) or mWHO class II / class II-III (52.2%, ESC moderate ACHD). There has been an increase in the percentage of women reviewed in Transition Clinic compared to baseline (44.7% versus 27.8%, respectively), a clearer documentation of mWHO pregnancy risk (31.6% versus 7.3%) and an increase in contraceptives use, especially in moderate and severe ACHD patients compared to baseline (65.2% versus 57.1%, respectively). This resulted in an overall reduction of the numbers of pregnancy in ACHD women compared to baseline (7.9% versus 40.1%, respectively), especially in women with ESC moderate and severe ACHD (Table 1) with consequent reduction in hospital admissions and morbidity.

Conclusions: Implementing risk stratification tools (mWHO pregnancy risk stratification) and systematic pre-pregnancy counselling with contraceptive advice (all key recommendations from the ESC guidelines) reduce the rate of high-risk pregnancy in ACHD women. This translates to an improvement in survival rates and lower morbidity in ACHD women. Further follow up is required to ensure the consistency of this finding.