

Real world heart failure epidemiology and outcome: a population-based analysis of 1,990,162 heart failure patients

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Background: Heart failure (HF) is the leading cause of death and hospitalization in developed countries. Most of the information about HF is based on selected cohorts, the real epidemiology of HF is scarce.

Purpose: To assess trends in the real world incidence, prevalence and mortality of all in-and outpatients with HF who presented in public health system in 2009–2018 in Poland.

Methods: It is a retrospective analysis of 1,990,162 patients who presented with HF in Poland in years 2009–2018. It is a part of nationwide Polish Ministry of Health registry that collects detailed information for the entire Polish population (38,495,659 in 2013) since 2009. Detailed data within the registry were collected since 2013. HF was recorded if HF diagnosis was coded (ICD-10).

Results: The incidence of HF in Poland fell down from 2013 to reach 127,036 newly diagnosed cases (330 per 100,000 population) in 2018 that equals to 43.6% drop. This decrease was mainly driven by marked reduction in females ($p < 0.001$; Fig. 1A) and HF of ischaemic etiology (HF-IE vs

HF-nonIE, Fig. 1B. $p < 0.001$). The HF incidence per 100,000 population decreased across all age groups with the greatest drop in the youngest (Table 1).

The prevalence rose by 11.6% to reach 1,242,129 (3233 per 100,000 population) in 2018 with significantly greater increase in females and HF-IE (both $p < 0.0001$, Fig. 1C and D, respectively). The HF prevalence per 100,000 population increased across all age groups except for the 70–79 years old. (Table 1).

Mortality increased by 28.5% to reach 142,379 cases (370 per 100,000 population) in 2018. The rise was more pronounced among females ($p = 0.015$, Fig. 1E) and in HF-IE ($p < 0.001$, Fig. 1F). The HF mortality per 100 000 population increased across all age groups, except for the 50–59 subgroup (Table 1).

Conclusions: Heart failure incidence plummeted in years 2013–2018 in Poland due to drop in newly diagnosed HF-IE. Despite that fact, the prevalence and mortality increased with rising trends in HF-IE.

Table 1. Changes in epidemiology 2018/2013

Age subgroups	Incidence change*	Prevalence change*	Mortality change*
Age 0–17	42.10%	133.63%	111.77%
Age 18–39	91.59%	138.02%	147.13%
Age 40–49	76.17%	110.42%	121.27%
Age 50–59	69.11%	100.85%	105.63%
Age 60–69	67.96%	104.78%	116.93%
Age 70–79	59.46%	92.98%	101.61%
Age 80+	60.63%	104.26%	120.15%

*Change defined as percentage change: 2018 vs 2013.

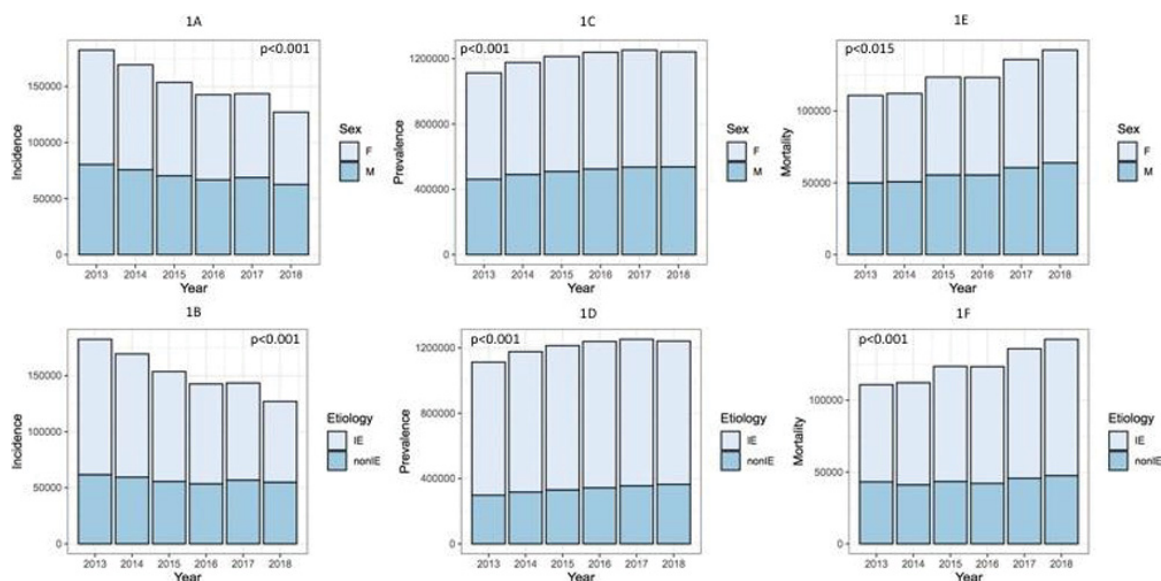


Figure 1. Incidence, prevalence, mortality trends