Background: Patients with myocardial infarction with non-obstructive coronary arteries (MINOCA) present as a main feature a non-relevant (≤50%) obstructive coronary artery upon angiography despite clinical symptoms related to acute coronary syndrome. Being mostly a benign syndrome with favorable clinical outcome and almost exclusively conservative treatment, it still utilizes relevant financial and capacity resources including high care monitoring and in-hospital treatment of relevant length. Regarding scarcity of resources, this entity should be put under particular consideration.

Objective: Our investigation focuses on the procedural and economic impact of MINOCA patients vs. "true myocardial" infarction patients and related clinical outcomes in a single-center patient collective of a large university heart center in Germany.

Methods: We analyzed all patients admitted to our hospital with suspected acute coronary syndrome within a 12-month period (2017 - 2018) who had a troponin elevation and received invasive coronary angiography. We collected data on in-hospital costs, procedures, clinical parameters, work-flow timelines, and other relevant parameters.

Results: Of a total 3021 screened patients, we included 660 patients with acute coronary syndrome. Of those, 103 patients were attributed to the MINOCA - group. 542 patients presented with a "classical" myocardial infarction, and thus formed the MIOCA (myocardial infarction with obstructive coronary arteries) group (Table 1). In-hospital mortality (MIOCA vs. MINOCA: 59 (11.1%) vs. 0 (0%) patients; p < 0.01), and 30-day mortality (MIOCA vs. MINOCA: 94 (17.3%) vs. 5 (4.2%) patients; p < 0.01) after the clinical index event were significantly higher in the "classical" myocardial infarction group (MIOCA). Overall length of hospital stay (mean: 9.5 ± 8.7 days vs. 12.5 ± 12.7 days; p = 0.016; median: 8.0 (5 - 14) vs. 7.0 (4 - 11); p = 0.023) as well as duration of high care monitoring (mean: 2.4 ± 4.6 days vs. 4.7 ± 7.7 days; p = 0.004; median: 1.9 (1.1 - 4.4) vs. 1.5 (0.4 - 2.7); p = 0.01) were shorter in the MINOCA group compared to MIOCA. However, in a 12-months period, a total sum of 298.4 days was attributed to high care monitoring for MINOCA patients (Figure 1). With average and median costs of 6871.5 ± 5670.8 and 3585.2 (3461.4 - 10167.2) EUR per index, MINOCA treatment costs were lower compared to the MIOCA group (mean: 13045.9 ± 7896.9 EUR; p = 0.02; median: 5958.9 (4682.7 - 16654.9) EUR; p < 0.01). MINOCA treatment was not associated with a relevant profit for these expenses (mean: 198.1 ± 4329.2 EUR; median: 0 (-1702.6 - 1405.1) EUR; p = 0.042) and a relevant share of 36.2% of the total cost was generated due to high care monitoring in these patients (Figure 1).

Conclusion: In light of growing scarcity of staff, financial and capacity resources MINOCA should be put under particular consideration for refining care concepts and resource allocation.
Figure 1. Days in high care monitoring (ICU / IMC) and associated costs for patients with myocardial infarction with non-obstructive coronary arteries (MINOCA).