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Low ejection fraction – high workload

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KEYWORDS: acute coronary syndrome, mechanical circulatory support, low ejection fraction.

CITATION: Cardiol Croat. 2026;21(11-12):212. | https://doi.org/10.15836/ccar2026.212

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Introduction: Patients in acute coronary syndrome and low ejection fraction with indication for percutaneous coronary interventions are at high periprocedural risk. Which criteria should we use for decision making in applying right mechanical circulatory support (MCS)?[1]

Case report: 74-years-old patient was presented in cardiology unit of University Hospital Centre Osijek with acute coronary syndrome. He was hypertonic, 20 years diabetic with known peripheral artery disease and ischemic cardiomyopathy. Multivessel coronary disease with medium high SYNTAX score was found in urgent coronary angiography, his BCIS SCORE was calculated 8(very high risk) so he was presented on a heart team meeting. Echocardiography showed dilatative cardiomyopathy with low ejection fraction (Simpson 15%) and moderate mitral regurgitation. Heart Team decision was to do high risk percutaneous coronary intervention with mechanical circulatory support. The selection of mechanical circulatory support depended on peripheral access, high work demand, and on cardiac hemodynamic status. Peripheral access was limited because of recent vascular surgery (*Endarterectomy AIE, ACF, ASF and APF l dex cum HC patch plastica*) and abundant peripheral calcification. Calcification of coronary arteries demanded extensive lesion preparation, challenging coronary intervention with use of rotational atherectomy, hence high risk of causing periprocedural cardiac shock. Our markers of cardiac hemodynamic status were systolic blood pressure (BP), cardiac output (CO), left ventricular end-diastolic pressure (LVEDP) and lactate concentration. After all this consideration we decided to use Impella CP as mechanical circulatory support, and to do PCI LAD and RCA after using rotational atherectomy in both coronary arteries. Periproceduraly patient was practically without his own cardiac output, but stabile because of Impella CP workload.

Conclusion: In complex coronary interventions and low cardiac ejection fraction patient the choice of MCS can be crucial in providing enough circulatory support to avoid adverse events. The markers for using mechanical support are BP, CO, LVEDP and lactate concentration.

RECEIVED:
October 24, 2026

UPDATED:
November 4, 2026

LITERATURE

1. Møller JE, Thiele H, Morrow D, Kjærgaard J, Hassager C. Mechanical circulatory support: when, how, and for whom. Eur Heart J. 2025 Apr 22;46(16):1480-1492. https://doi.org/10.1093/eurheartj/ehae925