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Where you live determines your treatment

EDITORIAL

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Better compliance with prevailing guidelines may even out regional differences in the treatment of patients with myocardial infarction.

In 2018, more than 13 000 patients were diagnosed with myocardial infarction in Norwegian hospitals (1). The incidence has steadily declined since the turn of the millennium, and the mortality has been more than halved in the same period, but with an ageing population and large age cohorts in the post-war generation, an increase is expected in the years to come. There are major regional variations in terms of both incidence and mortality. Finnmark, Hedmark and Oppland counties have a higher age-adjusted mortality rate from myocardial infarction than the national average, while the Agder counties have a lower age-adjusted mortality rate.

ST-elevation myocardial infarction is caused by an occluded coronary artery and is treated with revascularisation in the form of a primary percutaneous coronary intervention (PCI) or a combination of thrombolysis and PCI. The European guidelines for ST-elevation myocardial infarction, which were issued in 2017 and are endorsed by the Norwegian Cardiological Association, recommend reperfusion therapy in all patients with ST-elevation myocardial infarction and symptoms of less than 12 hours (2). PCI is the preferred form of reperfusion therapy, but thrombolysis should be considered if the time from diagnosis until PCI is expected to exceed 120 minutes. In 2017, the recommended time from diagnosis to thrombolytic treatment was reduced

from 30 minutes to 10 minutes, and the guidelines specify that patients should receive this treatment at the pre-hospital stage and then be brought directly to a PCI centre. If the thrombolytic treatment is ineffective, it is recommended that PCI be performed urgently; if the effect of thrombolysis is satisfactory, PCI should be performed within 2–24 hours. In patients presenting late (up to 48 hours after symptom onset), PCI should be considered even if the patient no longer shows signs of ongoing ischaemia. Many people live far away from a PCI centre, and good treatment pathways and well-functioning logistics are required to be able to provide treatment in time.

> ***«Good treatment pathways and well-functioning logistics are required to be able to provide treatment in time»***

In the study published in this issue of the Journal of the Norwegian Medical Association, Arnesen and colleagues have examined the time elapsing until reperfusion in patients with ST-elevation myocardial infarction (3). The study elucidates an important challenge: many patients fail to undergo revascularisation in time. The results from Trondheim corroborate official figures from the Norwegian Registry of Invasive Cardiology and the Norwegian Myocardial Infarction Registry (4, 5). In 2018, only 67 % of the patients underwent revascularisation within the recommended time. Altogether 32 of Norway's 53 hospitals failed to achieve the goals regarding the time to treatment at the acute stage. Unless they are provided with timely treatment, patients with ST-elevation myocardial infarction have a high mortality rate. A number of large-scale randomised, controlled studies comparing thrombolytic treatment to PCI have shown that PCI is the preferred method of revascularisation when it comes to preventing mortality, recurrence of myocardial infarction, and stroke. Most of the studies compare PCI with thrombolysis alone, while European guidelines recommend a combined strategy that includes thrombolytic treatment, pending PCI (2).

The European recommendations for initial thrombolytic treatment followed by direct transport to a PCI centre are corroborated by a French registry study from 2019 (6). Like Arnesen and colleagues, this study finds that the time from diagnosis to primary PCI often exceeds the recommended time frames.

Among patients with non-ST-elevation myocardial infarction there are major regional differences in the treatment (5, 7). In 2018, 74 % of these patients were examined with coronary angiography. Only 46 % underwent coronary angiography within 24 hours as recommended by the European guidelines, while 63 % were examined within 72 hours. Many patients with minor myocardial infarctions will not be put at any risk to life or of serious harm by waiting for 72 hours for coronary angiography, but the long wait represents an unnecessary burden.

The challenge for the regional health authorities consists in ironing out the differences. Well-functioning treatment chains that ensure the quickest possible treatment in accordance with the guidelines for all types of myocardial

infarctions are likely to even out some of the differences that are currently observed in the incidence, treatment and mortality of myocardial infarction (1, 2, 5).

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