

Medical quality registers can be used to improve local care

Is treatment of acute myocardial infarction in compliance with new guidelines?

Medical guidelines are intended to ensure that all patients are offered treatment with scientifically documented efficacy, and are one of the means for ensuring equal treatment, irrespective of place of residence, age or gender. Some guidelines do not only contain recommendations on choice of therapy; they also stipulate time limits. This applies, for example, to acute myocardial infarction, where the Norwegian medical community has endorsed the European guidelines. New guidelines for treatment of acute myocardial infarction without ST elevation (NSTEMI) (1) and myocardial infarction with ST elevation (STEMI) (2) were published in 2011 and 2012, respectively. The recommendation for NSTEMI patients is now coronary angiography and, if indicated, percutaneous coronary intervention (PCI) within two hours of first medical contact for high risk patients, and within 24 hours for the majority. This represents a substantial reduction of the time frame compared with previous recommendations, which were within 24 hours and within 72 hours, respectively (3, 4).

In this edition of the *Journal of the Norwegian Medical Association*, Jortveit et al. (5) publish a survey of whether patients with acute myocardial infarction who were admitted to Sørlandet Hospital Arendal in 2012 received treatment within the recommended time limits. The hospital is the PCI centre for the counties of West and East Agder and Telemark. Most STEMI patients were admitted directly to Sørlandet Hospital Arendal and had invasive evaluation and treatment within the recommended time limits. Revascularisation for many NSTEMI patients was delayed, however. The median time from admission at another hospital to angiography/PCI was 27.7 hours. Thus, 67.5 % of these patients did not receive treatment within the time limit specified in the European guidelines.

The data were retrieved from the hospital's entries in the Norwegian Myocardial Infarction Register. The survey is an example of how a medical quality register can be used to single out quality measurements relating to treatment. It is commendable that Sørlandet Hospital Arendal is reporting on compliance with current guidelines – the first Norwegian hospital to do so. As of 1 January 2013, the Norwegian Myocardial Infarction Register has been implemented at all hospitals that treat acute myocardial infarction in Norway. Use of the register is required by law. It will be interesting to see the results from the other hospitals as well.

Jortveit et al. made several interesting findings. The emergency response chain for treating acute myocardial infarction with ST elevation represented pioneering logistics work when it was established about 15 years ago. Within a short time it was functioning very efficiently. But a good treatment chain is of little value if patients delay signalling that they need help. The median time from symptom onset to admission to the first hospital in STEMI cases was found in the survey to be relatively short, reflecting the fact that the message about the importance of early warning has reached the community.

Compliance with guidelines requires not only that they are known and implemented in the medical community, but also that there is adequate treatment capacity. Strong medical recommendations that treatment is effected within a narrow time frame reduce the flexi-

bility of the health services. It is surprising that the survey did not reveal a statistically significant difference in the time from admission to coronary angiography/PCI for those who were admitted during the week compared to those who were admitted on a Saturday or Sunday. This is not unexpected when it comes to STEMI patients, but gives pause for reflection on the many NSTEMI patients who have to be moved from a local hospital to a PCI centre and back. When national data for 2013 are available, the results will probably not be equally good. The finding indicates an impressive effort on the part of colleagues at Sørlandet Hospital Arendal to comply with the guidelines. Angiography within 24 hours of the first medical contact presupposes effective 24-hour operations at coronary units, with Sundays and holidays almost as busy as ordinary days. It is difficult to envisage this without a significant increase in weekend manning of both cardiac departments and pre-hospital services. Joint records for cooperating hospitals, where a short, updating note would suffice, would be of help and could save medical administrative work in connection with admission and discharge in this type of treatment chain.

The authors argue in favour of stronger centralisation of NSTEMI patients to PCI centres to enable revascularisation within two hours when there is a strong clinical suspicion of acute myocardial infarction. The numbers concerned are uncertain. A survey of patient numbers will be necessary, both for dimensioning the current treatment loops and for discussions on decentralisation. The authors point out that echocardiography in the Emergency Department could identify patients in need of prompt treatment. The method is recommended as a standard routine in the new European guidelines for acute coronary syndrome without ST elevation (1). A Norwegian survey showed that echocardiography on admission by doctors in training on call at local hospitals provided diagnostic benefits additional to the diagnosis of acute myocardial infarction (6), but this requires adequate training in echocardiography. The method will be of important diagnostic value for patients who are not sent directly to a PCI centre, but where rapid treatment is nonetheless indicated. However, revascularisation within two hours is not consistent with a primary evaluation at the local hospital for high risk coronary patients. The decision as to where NSTEMI patients should be hospitalised must be made on the basis of pre-hospital information, and requires good communication between the hospital doctor and pre-hospital services.

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