K2.1 Disparities in the occurrence and care of myocardial infarction in the light of labour market correlations*

ANNAMÁRIA UZZOLI

There are an average of 15,000 myocardial infarction cases registered annually in Hungary, and the disease causes the death of about 40 percent of the cases, that is, six thousand individuals. According to the data of the National Myocardial Infarction System, approximately a third of patients are under the age of 60; there are 20–25 percent more males among the sufferers than females; and it causes the death of 1.5 times more males than females. Premature mortality due to infarction mostly affects middle-aged males, while females are mostly affected by the disease in an older age (*Jánosi,* 2019). Thus, infarction affects the working-age population substantially, and the local Hungarian disparities in disease occurrence and mortality have serious labour market implications as well.

Improving access, decreasing mortality, increasing territorial differences

The development of up-to-date care for myocardial infarction: the development of the cardiac catheter intervention began in the mid-2000s in Hungary, due to which the mortality rate has dropped by 50 percent. Even though care conditions and access have improved, a controversial situation has come about. The occurrence rate of the disease is still high in European standards, and although the majority of lives are saved, the long-term survival rate has slightly decreased (*Uzzoli,* 2020).

The disparities in the occurrence and care of infarction are observable by location, sex, and the different stages of infarction care. Territorial differences are big within the country: the infarction-related mortality rate of females has increased after the 2008/2009 crisis (*Tóth et al.,* 2018). Higher mortality rates are mainly linked to locations that lie further away from hospitals, such as the regions in the northeast and the southeast, or the regions along the southwest border (*Figure K2.1.1*).

The agglomeration of Budapest is also divided, because the mortality rate can be up to five times higher in the northern and southern areas than in the western parts of the agglomeration. Since the mid-2000s, with the widespread application of the cardiac catheter intervention, the mortality rate has dropped by 50 percent across the country, but this was visible mainly in short-term survival rates while long-term survival rates actually decreased.

At the same time, improved access did not go hand-in-hand with a more substantial decrease in the occurrence of the disease; on the contrary, by the mid-2010s, the occurrence rate of infarction in males slightly increased. Additionally, the occurrence rate of the disease slightly increased among younger age groups as well (those between 40–60) (*Uzzoli et al.,* 2019). Only less than 40 percent of patients participate in rehabilitation, even though it would be essential for the restoration of physical activity and the improvement of survival chances (*Mérték,* 2017).

What is the reason behind the fact that an improved access to cardiac catheter interventions did not have an equal effect on all patients? In order to find answers to this question, interviews have been conducted with the key actors of cardiac care (ambulance staff, physicians, nurses, dieteticians, physiotherapists, etc.) and with the patients themselves.

Labour market correlations

The processing of the content of the interviews has contributed numerous factors to the understanding of the correlations between the infarction situation and labour market effects in Hungary. Saving patients under the age of 60 (that is, those of working-age), and then restoring their ability to work,

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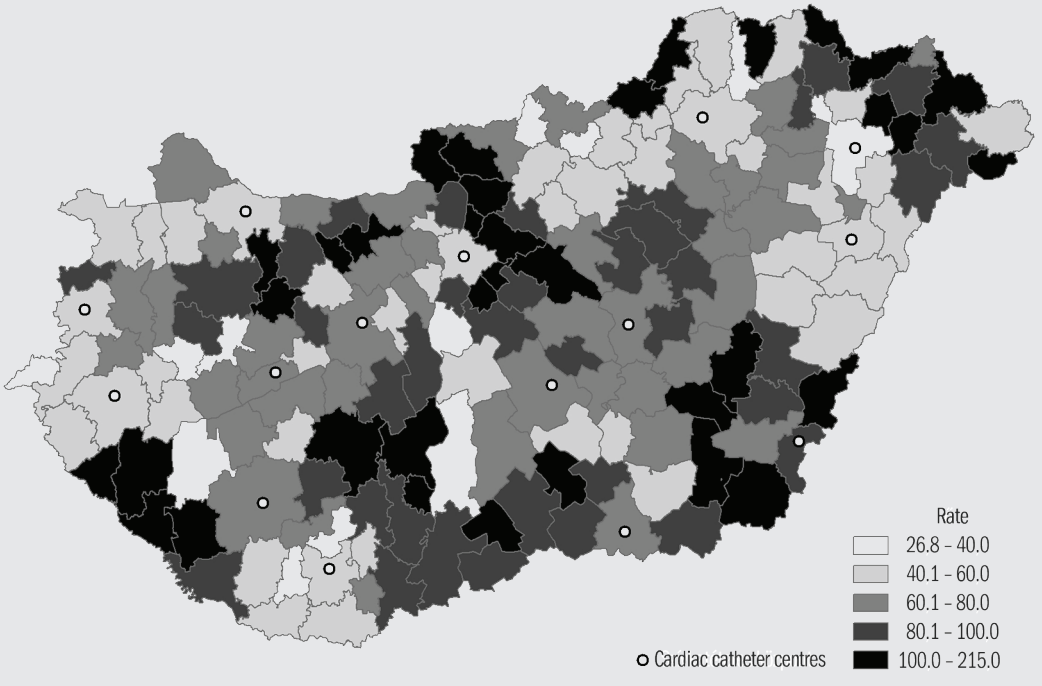
Figure K2.1.1: The standardised mortality rates of acute myocardial infarction in the various districts in 2015 (case/100,000 inhabitants)



Data source: ksh.hu, nefi.hu.

is of national economic interest, as well. There may be a factor of three difference between districts in the occurrence rate of infarction within this age group. The territorial concentration of working-age patients is salient in the border regions of Northeastern and Southeastern Hungary.

According to the unanimous opinion of the healthcare workers and patients who participated in the interviews, the following conditions are relevant, from a labour market perspective, for the occurrence of the disease and the access to cardiac care:

1. Work-related stress: among the risk factors of the disease (such as tobacco use, an unhealthy lifestyle), stress is an essential factor and its root causes can be linked to the workplace to a substantial extent.

"Not only did I fulfill my duties at the workplace, afterwards I had to run to my second job, so that we can make ends meet." (Male patient, 53).

2. Loss of income: frequently, working-age patients do not undertake inpatient rehabilitation (which takes several weeks) so that they can go back to work as soon as possible, decreasing their chances of restoring the quality of life they had prior to the disease.

"Not many are able to carry out a complete lifestyle change, or switch to a different attitude to work, ... because they are worried about their jobs, their livelihoods." (Cardiac nurse with tertiary educational attainment.)

3. Reduction in functional capacity: if the patient does not receive or does not undertake rehabilitation, and does not go through a lifestyle change, the

chances of another infarction and of severe complications are higher. In the short run, these can lead to a reduction of the patient's functional capacity and to a deteriorated labour market status in most cases.

"If it [the rehabilitation] is over, I will start the incapacity process. And then I'll have to look for something. If I won't find the kind of work that they allow, I will still need money... I do not want to neglect myself, at 44, I don't want to spend my life at home." (Female patient, 44.)

A common observation is that the improvement of access to cardiac catheter interventions has brought with it a loss of an individual sense of responsibility. Due to the fast and effective intervention, some patients do not, or barely develop a sense of being ill, which prevents them from following physicians' instructions conscientiously, and is an impediment to a successful cooperation between physician and patient, and to participation in rehabilitation (*Uzzoli et al.* 2019).

Recommendations

Some of the policies that are based on research findings try to draw decision makers' attention to the fact that the further reduction of the occurrence of infarction and of the related mortality has direct, beneficial labour market effects. In the future, working-age patients need to be engaged in rehabilitation programmes at higher rates – possibly through an outpatient structure – as it plays a key role in the prevention of further infarctions, the restoration of working capacity, ensuring a good quality of life, and ultimately, in increasing the chances of survival. Besides, through the development of infarction-related health education, various strategies for coping with work-related stress need to be highlighted. The role of occupational physicians in the maintenance of a stable condition based on a lifestyle change and on the appropriate type and level of physical activity also needs to be strengthened.

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