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# Quality of life of patients with acute myocardial infarction and arterial hypertension

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### Abstract
Coronary artery disease (CAD) is the main cause of death in Ukraine. The aims in the treatment of patients with CAD are to relieve symptoms, to maximize function in everyday life, and to achieve the highest level of health-related QOL within the specific limits imposed by CAD. The aim of the current study was to describe QOL in patients with acute myocardial infarction (MI) and concomitant arterial hypertension (AH). We examined 130 patients with acute Q-myocardial infarction (MI): 67 – without and 63 – with essential arterial hypertension. Arterial hypertension in patients with acute myocardial infarction has additional negative effect for quality of life.

**Keywords:** Quality of life, myocardial infarction, arterial hypertension

## Introduction
Quality of life (QOL) measures have become a vital and often required part of health outcomes appraisal [1]. Over the past 30 years, hundreds of instruments have been developed that purport to measure QOL [2]. Although the definition of QOL is still evolving, Revicki and colleagues define QOL as "a broad range of human experiences related to one's overall well-being. It implies value based on subjective functioning in comparison with personal expectations and is defined by subjective experiences, states and perceptions. Quality of life, by its very natures, is idiosyncratic to the individual, but intuitively meaningful and understandable to most people" [3]. This definition denotes a meaning for QOL that transcends health. The Quality of Life Scale (QOLS) first developed by American psychologist, John Flanagan, befits this definition of QOL [4].

As the patient's own perspective of the impact of disease and its treatment, patient-reported outcome measures such as QOL have been recommended in both clinical care and research studies by the National Heart, Lung and Blood Institute, the U.S. Food and Drug Administration, and the European Medicines Agency. Generic QOL outcome measures permit assessment of a wide range of aspects of life applicable to a variety of health states and are useful in conducting general health survey research [5]. Specific QOL outcome measures focus on disease-relevant issues and are appropriate outcome measures in both therapeutic intervention trials and routine clinical care [5] but should be used only in patients with the disease/diagnosis for which the instrument is validated and not with an "off-label diagnosis."

A core disease-specific QOL questionnaire approach with adequate generalizability and sufficient specificity has been available for about two decades to make between-diagnosis outcome comparisons, for example, in different fields of medicine.

Coronary artery disease (CAD) is the main cause of death in Ukraine. The aims in the treatment of patients with CAD are to relieve symptoms, to maximize function in everyday life, and to achieve the highest level of health-related QOL within the specific limits imposed by CAD.

The aim of the current study was to describe QOL in patients with acute myocardial infarction (MI). The secondary aim was to evaluate influence for QOL of concomitant arterial hypertension (AH).

## Material and Methods
We examined 130 patients with acute Q-myocardial infarction (MI): 67 – without and 63 – with essential arterial hypertension. Patients were eligible if they had an objective measure of STEMI and/or arterial hypertension criteria [6, 7] and signed informed consent.

To evaluate QOL in observed patients we used the EuroQol-5D (EQ-5D) questionnaire.

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The questionnaires were completed by patients a day after elective coronary angiography or elective percutaneous coronary intervention (PCI) or system fibrinolisis. The EQ-5D descriptive system comprises the following 5 dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. The EQ VAS records the respondent's self-rated health on a vertical, visual analogue scale where the endpoints are labelled 'Best imaginable health state' and 'Worst imaginable health state' [8].

Patient clinical and sociodemographic characteristics are described as either dichotomous (%) or continuous variables (mean ± SD). Comparisons among cardiac diagnostic groups were made using analysis of variance (ANOVA) (continuous variables) and the $\chi 2$ test (categorical variables). The assumptions for ANOVA (normality and homoscedasticity) were tested by Kolmogorov-Smirnov, skewness, and kurtosis statistics. The Spearman correlation coefficient was used to calculate relationships between the continuous variables. Statistical significance was established at $p \leq 0.05$.

## Results and Discussion
Among all patients with MI were: 82 males (63.07%) and 48 (36.93%) females. Average age was (64.68±12,59) years.

Moderate mobility problems had 11 (16.42%) MI patients, and extreme ones – 56 (83.58%) patients. In patients with concomitant AH the frequency of extreme problems with mobility was for 1.14 times higher – in 60 (95.24%) persons ($\chi^2$=4.591; p<0.05) (see table).

AH had influence for self-care problems: 60 (95.24%) patients from this group had extreme ones. It was for 1.16 times higher than in group without hypertension ($\chi^2$=5.50; $p$<0.05).

Extreme problems in usual activity were detected in all patients with acute MI.

In patients with MI and AH for 1.23 times higher saw the extreme pain/discomfort vs patients without hypertension ($\chi^2$=4.279; p<0.05).

We saw any differences in prevalence symptoms of anxiety/depression among both groups patients. Must note, that high quantities persons had moderate signs of depression: 55 (82.09%) patients and 51 (80.95%) patients relatively.

**Table 1:** Quality of life in patients with myocardial infarction

| Sign | Patients with MI | |
|---|---|---|
| | Without AH, n=67 | With AH, n=63 |
| Mobility | | |
| no problems | 0 | 0 |
| moderate problems | 11 (16.42%) | 3 (4.76%)* |
| extreme problems | 56 (83.58%) | 60 (95.24%)* |
| Self-care | | |
| no problems | 0 | 0 |
| moderate problems | 12 (19.91%) | 3 (4.76%)* |
| extreme problems | 55 (82.09%) | 60 (95.24%)* |
| Usual activities | | |
| no problems | 0 | 0 |
| moderate problems | 0 | 0 |
| extreme problems | 67 (100%) | 63 (100%) |
| Pain/dyscomfort | | |
| no problems | 0 | 0 |
| moderate problems | 21 (31.34%) | 10 (15.87%)* |
| extreme problems | 46 (68.66%) | 53 (84.13%)* |
| Anxiety/depression | | |
| no problems | 3 (4.48%) | 4 (6.35%) |
| moderate problems | 55 (82.09%) | 51 (80.95%) |
| extreme problems | 9 (13.43%) | 8 (12.7%) |

Note: significant differences between groups: * *p*<0,05.

Several studies have reported that depression and anxiety predict subsequent mortality in patients with CAD [9]. Anxiety is common in cardiovascular diseases, and a high proportion of depressed patients with CHD also have anxiety symptoms due to co-morbid socioeconomic factors [10]. Depression is common in patients with CAD [10], and a high proportion of anxious patients with CHD also suffer co-morbid depression disorders [11].

Due analysis of visual analog scale of EQ-5D concomitant AH for 1.15 times aggravated of QOL patienst with MI: (42.86±1.31)%, vs (49.31±1.13%) (*p*<0.05).

## Conclusion
Arterial hypertension in patients with acute myocardial infarction has additional negative effect for quality of life.

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