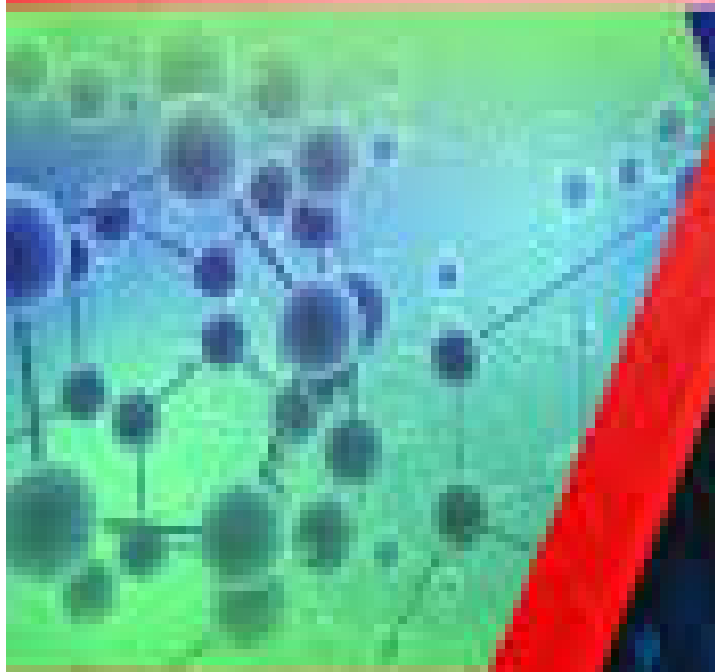




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# Effect Of Endovascular Revascularization On Renal Function

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## ABSTRACT

*To research the short-term and long-term effect of coronary artery stenting on renal function. In patients with coronary heart disease within 3 months after endovascular revascularization-preserving renal dysfunction, despite the normalization of creatinine concentration.*

*Key words: chronic renal failure, contrast-induced nephropathy, sodium uretic peptide, creatinine, uric acid.*

## 1. INTRODUCTION

With the advanced technology and therefore the widespread introduction of endovascular ways in cardiology, the danger of developing distinction kidney disease increases. The development of acute nephritic harm is understood once victimisation X-ray contrast agents (1). This condition is related to cannular necrosis. It is believed that inside a pair of weeks the renal operate is restored, however, taking into consideration the underlying pathology - coronary-artery disease vascular lesions, as well as renal arteries, that scale back capillary blood flow and, accordingly, glomerular filtration, the long-run impact of the administration of contrast agents in patients with artery disease with a requirement for endovascular interventional methods of examination and treatment, needs close study. This is one among the variants of the cardio renal syndrome (2).

Objective: To study the short-run and long-run impact of artery stenting on excretory organ function.

## 2. MATERIAL AND METHODS

The research included twenty one patients with arterial blood vessel disease, average age  $55,62 \pm 9.28$  years , who underwent coronary X-ray photography and stenting of the coronary arteries and whose blood creatinine was determined at baseline, on the 2nd, third day when vascular intervention finishes, concentration u N- terminal end of the molecule of brain sodium uretic peptide (BSUP), excretion acid, parathyroid hormone, diagnostic procedure (EchoCG).

### 3. RESULTS AND DISCUSSION

Coronaroangiography discovered 50 stenoses in 35 coronary basins in sufferers covered in the study (1.63 of them have been determined to be affected, wherein 2.33 coronary stenoses have been determined). Damage to the trunk of the left coronary artery become detected in four sufferers (20.04%), the anterior interventricular artery in thirteen sufferers (62.90%), the envelope of the artery in 8 sufferers (34.33%), and the proper coronary artery in 11 sufferers (47.63%). According to the outcomes of coronary angiography, 43 stents have been implanted in sufferers (2.05 stents on common in line with patient).

Echocardiography revealed dilatation of the left chambers of the heart (Table 1) and a decrease in total left ventricular contractility (ejection fraction -LVEF) in the patients included in the study. All patients showed regional hypo- and akinesis, stress echocardiographic examination in all patients was positive for stress-induced ischemia, which at the initial examination served as the basis for referring patients to coronary angiography. After endovascular revascularization for 6 months significant change in the size of heart cavities. Systolic function showed a significant increase in LVEF (by 18.15% by month 3,  $p < 0.001$ ; and by 21.25% by month 6,  $p < 0.001$ ). Regional dysfunction also improved: by the end of the 3rd month, regional hypokinesis was observed in only 8 patients, chi-square = 18.94,  $p < 0.001$ ; by the end of the 6th month - in 6 patients, chi-square = 23.44,  $p < 0.001$ . Stress echocardiography revealed stress-induced ischemia in 3 patients 3 months after revascularization, chi-square = 31.60,  $p < 0.001$ ; and in 4 patients - after 6 months chi-square = 25.66,  $p < 0.001$ ).

The concentration of cerebral sodium uretic peptide in the peripheral blood after endovascular revascularization through the third month considerably accelerated via way of means of 53.70% of the preliminary ( $p < 0.001$ ) and remained on the identical stage for the following 3 months (growth from the preliminary statistics through the stop of the sixth month amounted to 48.69%, the importance of variations with the preliminary statistics became  $p < 0.001$ ). A growth in the concentration of cerebral sodium uretic peptide shows renal disorder and is one of the markers of cardio renal syndrome (3,4). Assessment of the functional country of the kidneys on this study included serum concentrations of creatinine, reflecting the stages of glomerular filtration, uric acid and parathyroid hormone, an growth wherein is related to renal failure syndrome. Current suggestions are primarily based totally on proof based at the informative cost of serum creatinine concentrations earlier than evaluation is applied. The quality preventive method is the right choice of patients -the preliminary concentration of creatinine is a prognostic issue and have to serve as a criterion for the choice of patients (5.6).

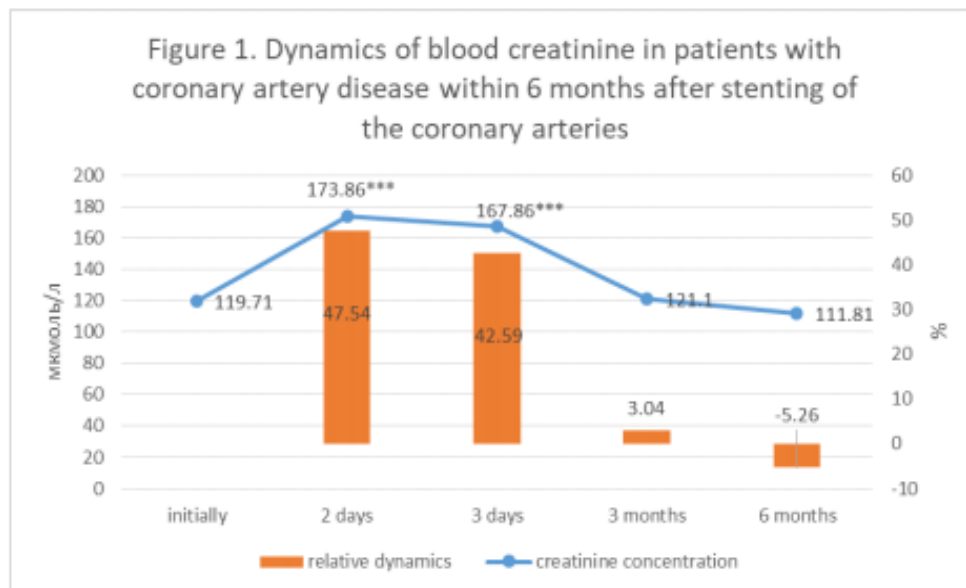
The concentration of serum creatinine considerably accelerated already by the 2d day after the radiopaque procedure (reliability with preliminary statistics - $p < 0.001$ ). By the 3rd day, the creatinine concentration reduced notably, however, it remained considerably better than the preliminary statistics ( $p < 0.001$ ). By the 3rd month of therapy, the concentration of serum creatinine returns to the preliminary stage at which it stays for the following three months. The stages of uric acid and parathyroid hormone growth by the 3rd month of therapy (parathyroid hormone -by 28.21% of the preliminary stage,  $p < 0.01$ ; uric acid -by 23.39%, nd). Subsequently, the concentration of each materials reduced, possibly reflecting the recuperation of renal function. Literature statistics additionally suggest the position of

parathyroid hormone in the pathogenesis of chronic coronary heart failure syndrome, complicating comparison-brought about nephropathy (7.8).

Table 1. Flow of echocardiography, biochemical parameters in patients with coronary supply route malady inside 6 months after endovascular revascularization

Indicator	Indicator	Indicator	Indicator
cerebral sodium urethic peptide, pg / ml	170,19±12,22	260,62±23,18***	252,00±39,48***
uric acid, mmol / l	9,92±2,57	11,54±3,10	7,97±1,94*
Parathyroid hormone, pg / ml	71,48±15,44	85,48±6,95**	69,14±12,17
The final diastolic volume of the left ventricle, ml	157,57±19,35	167,05±14,47	160,43±11,97
Left ventricular ejection fraction, %	51,43±6,64	60,05±4,70***	61,52±4,27***
LA, cm	4,02±0,25	4,03±0,16	4,01±0,10

Note: \* -main aspects of differences with the source data: 1 character -p <0.05, 2 characters -p <0.01, 3 characters -p <0.001.



Note: \* - importance of contrasts with the source information: one character - p <0.001.

#### 4. CONCLUSION

In this way, the research revealed persistent renal dysfunction in patients with coronary heart illness within 3 months after endovascular revascularization, in spite of the normalization of creatinine concentration. Backhanded signs of impeded useful state of the kidneys are an

increment within the concentration of sodium uretic peptide, uric acid and parathyroid hormone.

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