INTERVENTIONAL CARDIOLOGY

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The Results of Elective Percutaneous Coronary Interventions during Bivalirudin or Heparin Infusions Depending on the Type of Vascular Access

M.A. Sinkov, A. A. Shilov, V.I. Ganyukov*

Federal State Budget Scientific Institution (FGBNU) Scientific Research Institute for Complex Issues of Cardiovascular Diseases, Kemerovo, Russia

The presented article evaluates the PCI results in patients with stable coronary heart disease during bivalirudin and heparin infusions depending on the type of vascular access. The following results were obtained: the immediate and long-term results of elective PCI performed via transradial access using anticoagulant support with unfractionated heparin and PCI performed via transfemoral access during bivalirudin therapy are comparable in terms of the number of postoperative hemorrhagic complications and the number of adverse cardiovascular events.

Key words: bivalirudin, chronic coronary heart disease, hemorrhagic complications, transradial access, transfemoral access, long-term results.

**** Address for correspondence:***
Maksim Alekseevich Sinkov
Scientific Research Institute for Complex Issues
of Cardiovascular Diseases
6, Sosnovy blvd., Kemerovo, 650002
Phone: +7-904-370-98-33
E-mail : fox2you@mail.ru

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Original Minimally Invasive Retroperitoneal Approach for Transcatheter Aortic Valve Implantation

I.V. Isaeva, E.E. Kovaleva, E.A. Savelov, I.S. Arabadzhyan, V.A. Kryukov, D.G. Iosseliani*
Moscow City Center of Interventional Cardiology, Moscow, Russia

Recently, transcatheter aortic valve implantation (TAVI) became a routine clinical practice for the treatment of severe aortic stenosis in non-operable patients or in patients at high risk for "open" surgery. At present, many surgeons performing TACI prefer transfemoral approach because of its minimal invasiveness. However in about one third of patients with calcified or small femoral arteries, it is necessary to use other, alternative approaches – trans-apical, transaortic or subclavian – each of them having its indications and contraindications. Meanwhile in some cases it is impossible to use anyone of these approaches. The search of solution for this problem led us to the performance of TAVI through a new minimally invasive retroperitoneal approach to the iliac arteries.
Key words: aortic stenosis, transcatheter aortic valve implantation, retroperitoneal approach.

**** Address for correspondence:***
Dr. Elena Kovaleva
Moscow City Center of Interventional Cardioangiology
5, Sverchkov pereulok, Moscow, 101000, Russia
Phone: +7-495-624-96-36
E-mail: kolen80@bk.ru

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The Immediate and Long-term Results of the Graft Interventions

V.A. Ivanov[1], A.B. Shames [1], I.S. Bazanov[1, 2], B.L. Shklovskiy[1], A.V. Ivanov[1], S.B. Zharikov[1, 2], D.A. Maksimkin[2], I.I. Polyakov[1], A.G. Faybushevich[2]

[1] A.A. Vishnevsky Central Military Clinical Hospital # 3, Ministry of Defence of the Russian Federation,
Krasnogorsk, Russia

[2] Department of Hospital Surgery with Pediatric Surgery Course, Peoples' Friendship University of Russia, Moscow, Russia

Despite satisfactory immediate results of coronary artery bypass grafting (CABG), the risk of major cardiovascular events in patients remains high. Repeat CABG leads to a higher incidence of deaths and major cardiovascular events, therefore percutaneous coronary interventions (PCIs) are the option of choice for patients with post-CABG angina. The study focuses on the immediate and long-term graft stenting results. The study results show that when using the study algorithm, the graft stenting leads to the favorable immediate and long-term outcomes.

Key words: coronary graft stenting, graft lesions, graft occlusions, algorithm of lesion selection for graft stenting.

* *Address for correspondence:*
Dr. Ivan Bazanov
A.A. Vishnevsky Central Military Clinical Hospital # 3,
Ministry of Defense of the Russian Federation.
township Noviy, post-office Arkhangelskoye, Krasnogorsk district, Moscow region, 143420
Phone: +7-926-585-11-41
E-mail : ba333333@gmail.com; baza@kmail.ru

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Fractional Flow Reserve as a Reliable Method of Identifying the Syndrome-Related Artery in Patients with Stable Coronary Artery Disease (Literature Review)

*D.A. Asadov**

Moscow City Center of Interventional Cardiology, Moscow, Russia

To date, invasive coronary angiography is a routine method for the evaluation of the state of cardiac vessels. However, in their everyday practice, invasive cardiologists face the difficulties in the evaluation of coronary blood flow in the presence of clear clinical picture and the data of instrumental method of study. Wide-spread use of the methods of intravascular visualization faciulitate accurate determination of the tactics of treatment in many cases, however all these methods are just an addition to coronary angiography and cannot assess functional state of the coronary arteries. The method of invasive evaluation of the state of coronary blood flow based on the measurement of trans-stenotic gradient got general recognition and became a regular clinical practice. Unfortunately, the method of evaluation of fractional flow reserve has its advantages and drawbacks, which should be always taken into account in questionable situations. This article is an attempt of a review and an analysis of the existing literature with the aim to give an objective assessment of this methods role in everyday clinical practice.

Key words: fractional flow reserve, coronary artery disease, PCI.

**** Address for correspondence:***

Dr. Djamil Asadov

Moscow City Center of Interventional Cardioangiology

5, Sverchkov pereulok Moscow, 101000, Russia

E-mail : asadov_djamil@mail.ru

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Reperfusion Peak during Primary Angioplasty in Patients with STEMI: Incidence, Predictors, and Impact on Outcome

M.M. Demidova[1] , N. V. Soloveva[1], A.N. Yakovlev[1], S.M. Imran[2], D.A. Zverev[1], I.D. Esipovich[1], S.A. Boldueva[2], P.G. Platonov[3], V.M. Tikhonenko[1]*

[1] V.A. Almazov Federal Medical Research Center, Saint Petersburg

[2] Saint Petersburg Medical Academy of Postgraduate Education

[3] Lund University, Lund, Sweden

The study is designed to assess the ST changes during primary PCI in patients with STEMI using continuous 12-lead ECG monitoring. The reperfusion peak is described, its incidence is evaluated; and its predictors are identified.

Key words: reperfusion, STEMI, PCI, ECG monitoring.

**** Address for correspondence:***

Dr. Marina Demidova

V.A. Almazov Federal Medical Research Center (FMIC)

E-mail: marina.m.demidova@gmail.com

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Thrombosis of Non-Stenotic Coronary Arteries

*S.A. Prozorov**

N.V. Sklifosovsky Research Institute of Emergency Medicine, Moscow, Russia

The treatment results of 4 patients with thrombosis of non-stenotic coronary arteries are reviewed. The conservative therapy was effective in all cases.

Key words: non-stenotic coronary arteries, coronary thrombosis, acute myocardial infarction.

**** Address for correspondence:***

Dr. Serguey Prozorov

Department of Endovascular Diagnosis and Treatment,

N.V. Sklifosovsky Research Institute of Emergency Medicine

3, B. Sukharevskaya Ploschad, Moscow, 129010, Russia

E-mail : surgeonserge@mail.ru

Phone: +7-495-620-10-81 (office), +7-916-827-06-32 (mob.)

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A Case of Successful Closure of Coronary-pulmonary Fistula with a Stent Graft

V.V. Plechev, I.E. Nikolaeva, I.V. Buzaev, I.R. Mustafin, I.E. Yamanaeva*
Republican Cardiology Center, Ufa, Bashkortostan, Russia

Coronary-pulmonary fistula leading to pulmonary hypertension can have a severe negative effect of the condition of patients. The authors suggest the use of stent-grafts for such fistulae closure.

Key words: coronary-pulmonary fistula, pulmonary hypertension, stent-graft.

**** Address for correspondence:***
Dr. Ilfir Mustafin
Department of X-ray Diagnostic and Treatment Methods,
Republican Cardiology Center
96, St. Kuvykina str., Ufa, 450106
E-mail: don-ilfir@mail.ru

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Chronic Heart Failure in Patients with Type 2 Diabetes Mellitus

S.V. Kakorin[1] , I.A. Averkova[2], A.M. Mkrtumyan[2]*

[1] Moscow City Clinical Hospital No 4

[2] Evdokimov Moscow State University of Medicine and Dentistry, Moscow, Russia

We present a literature review of prevalence, pathogenesis, and prognosis of chronic heart failure (CHF) in patients with type 2 diabetes mellitus (T2DM). Diabetes and CHF acquire the status of the epidemic of the XXI century and require health care costs for prevention and treatment of these diseases. Application of modern pharmacological preparations and instrumental treatment of cardiovascular diseases (CVDs) increases life expectancy and significantly improves the quality of life of patients with CHF both with normal carbohydrate metabolism (CM) and with T2DM. However, the risk of cardiovascular mortality (CVM) in patients with T2DM compared to those with normal CM remains unchanged. The rapidly growing population of patients with T2DM will soon change a recently established idea of better CVD treatment outcomes. Violation of myocardial remodelling in T2DM is caused by a combination of factors associated with diabetic cardiomyopathy, reduction of the metabolic activity of cardiomyocytes, insufficient glucose transport into cells, endothelial dysfunction, diabetic macro- and microangiopathy myocardial fibrosis leading to disruption of filling the left ventricle and the development of CHF. Insulin resistance (IR) and compensatory hyperinsulinemia (HI) play a key role in the pathogenesis of T2DM. To improve the results of treatment aimed at risk reduction of CHF development in patients with T2DM and impaired glucose tolerance (IGT), it is necessary to achieve the traditional primary objective, i.e. glycemic control. Since IR and compensatory HI play a key role in the T2DM pathogenesis and are closely associated with the risk of arterial hypertension (AH) and CVDs due to atherosclerosis, the treatment of patients with T2DM and IGT and CHF should involve the drugs affecting IR.

Key words: type 2 diabetes mellitus, chronic heart failure, cardiovascular mortality, hyperglycemia, glycated hemoglobin, insulin resistance, hyperinsulinemia.

**** Address for correspondence:***

Dr. Sergey Kakorin

Moscow City Clinical Hospital No 4

25, Pavlovskaya str., Moscow, 115093

E-mail: kakorin-s@yandex.ru

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