

CLINICAL EXPERIENCE OF TRI-LEAFLET VALVE 'TRICARDIKS' IN MITRAL AND AORTIC VALVE PROSTHETICS

Ivanov V.A., Samkov A.V., Kevorkova R.A., Podchasov D.A., Domnin V.V.,
Evseev E.P., Yargin I.V.

Russian scientific center of surgery
Russian academy of medicine, Moscow, Russia

Artificial heart valve implantation is the basic method of surgical treatment of heart valve disease. Roscardioinvest Ltd. developed new model of artificial heart valve – tri-leaflet heart valve 'Tricardiks' which does not have analogues on the world market. 'Tricardiks' valves are similar to natural heart valves; they have three leaflets and provide true central flow. 'Tricardiks' valves combine the best features of biological and mechanical valves: durability of mechanical valves and better characteristics of the blood flow.

From August 2007 during clinical trials 10 implantations of aortal and mitral valves were made in Russian scientific center of surgery using heart valve 'Tricardiks'. 5 prostheses were implanted in aortic position (size 23 – 3 valves, size 25 – 2 valves), also 5 prostheses in mitral position (size 27 – 2 valves, size 29 – 3 valves). All patients were NYHA III – IV. Reason for aortic valve replacement was aortic valve insufficiency in 2 cases, and aortic valve stenosis in 3 cases (mean peak gradient on aortic valve was 98 mmHg). Reason for mitral valve replacement was mitral insufficiency in 3 cases, and mitral stenosis in 2 cases (mitral orifice before operation was 0.9 sm²).

Clinical estimation of implanted prostheses were made using transesophageal ECHO and transthoracic ECHO after operation. Such parameters as cardiac output, transprosthesis gradients and orifice area were considered. It was noticed that in mitral prosthetics cardiac output increased avg from 3.0 l/min till 5.3 l/min. Mitral orifice increased till 2.8 sm. It was noticed that in aortic prosthetics cardiac output increased avg from 3.0 l/min till 5.4 l/min, peak transprosthesis gradient decreased till 16 mmHg, mean gradient decreased till 9 mmHg. All valves had 0-1 degree of transprosthesis regurgitation.

The described experience shows that tri-leaflet prostheses 'Tricardiks' provide adequate parameters of heart hemodynamics by mitral and aortic valve replacement. It allows recommending these prostheses for extensive use.