Bolesti aortnog zalistka u Hrvatskoj u 2014. godini i njihovo liječenje

Aortic Valve Diseases in Croatia in 2014 and Their Treatment

Jure Mirat*, Igor Alfirević, Stjepan Barišin, Robert Bernat, Bojan Biočina, Vedran Ćorić, Igor Medved, Krunoslav Šego, Daniel Unić, Jakov Vojković

Radna skupina za bolesti srčanih zalistaka, Hrvatsko kardiološko društvo, Hrvatska

Working Group on Valvular Heart Disease, Croatian Cardiac Society, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Jure Mirat, Poliklinika Kardioton, Kaptol 26, HR-10000 Zagreb, Croatia. Phone: +385-1-5802-736 / E-mail: jure_mirat@yahoo.com

ORCID: Jure Mirat, http://orcid.org/0000-0002-3045-552X • Igor Alfirević, http://orcid.org/0000-0003-2812-7305 Stjepan Barišin, http://orcid.org/0000-0002-6883-2108 • Robert Bernat, http://orcid.org/0000-0001-8722-9497 Bojan Biočina, http://orcid.org/0000-0003-3362-9596 • Vedran Ćorić, http://orcid.org/0000-0002-5550-2767 Igor Medved, http://orcid.org/0000-0002-2029-200X • Krunoslav Šego, http://orcid.org/0000-0002-6593-8652 Daniel Unić, http://orcid.org/0000-0003-2740-4067 • Jakov Vojković, http://orcid.org/0000-0002-7745-7987

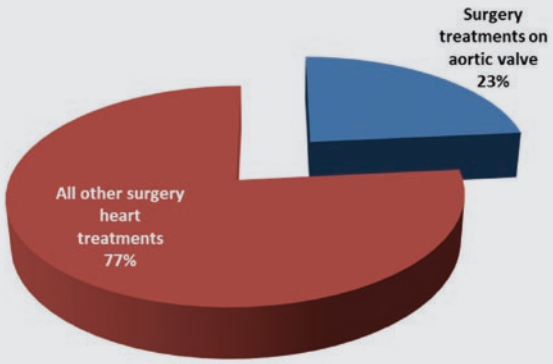
Kirurško liječenje bolesti aortnog zalistka u Republici Hrvatskoj kirurški je zahvat koji zauzima važno mjesto u cjelokupnim operativnim postupcima kardiokirurških centara. Prema izvješćima svih šest kardiokirurških centara, omjer zahvata na aortnom zalistku iznosi 23% svih zahvata, što u apsolutnim brojevima čini 636 operacija u 2014. godini (**slika 1**). U usporedbi s podatcima iz 2012. godine[1] može se primijetiti porast broja zahvata na aortnom zalistku u zadnje tri godine od oko 8%. Ovo je u skladu s potrebama s obzirom na incidenciju, posebno degenerativne geneze, koja stoji uz bok koronarnoj patologiji s kojom dijeli zajedničke čimbenike rizika i sličnu patogenezu. S obzirom na to da nemamo vlastitih podataka o pojavnosti ovih bolesti u općoj populaciji u nas, kada bi se napravila projekcija incidencije aortne patologije iz europske perspektive na Republiku Hrvatsku, potrebe za operativnim zahvatima bile bi mnogo veće.[2] Trendovi su, ipak, ohrabrujući i zahtijevaju daljnje praćenje i poticaje da se dosegne optimum s obzirom na bolju prognozu *quoad vitam i quoad valetudinem* pacijenata koji se podvrgavaju operativnom zahvatu u odnosu prema onima koji se ne operiraju.[3,4]

Komorbiditet aortne stenoze s koronarnom bolesti srca je visok i na to upućuju i naši rezultati u prošloj godini. Postotak kombiniranih operativnih zahvata sa zamjenom aortnog zalistka (AVR) i ugradnjom aortokoronarnih premosnica (ACBP) bio je 31%, a postotak izoliranih zahvata samo zamjene aortnog zalistka bio je 69% (**slika 2**). Broj kombiniranih zahvata na aortnom zalistku ipak

Surgical treatment of aortic valve disease in the Republic of Croatia is a surgical procedure that has a very important place in the overall operating procedures in cardiac surgery centers. According to the reports of all six cardiac surgery centers, aortic valve procedures make up 23% of total procedures performed, which in absolute numbers means 636 aortic valve surgeries in 2014 (**Figure 1**). In comparison with data from 2012[1], there has been an increase in the number of aortic valve procedures of about 8% during the last three years. This is in line with the needs based on the incidence of the disease, especially coronary pathology that stands side to side with coronary pathology with which it shares risk factors and similar pathogenesis. We do not have data on the overall prevalence of these diseases in the general population, but if a projection of the incidence of aortic pathology in the Republic of Croatia was made from an European perspective, the need for surgical procedures would be estimated to be much higher.[2] However, observed trends are encouraging and require further monitoring, as well as encouragement to achieve optimum results regarding better prognosis *quoad vitam* and *quoad valetudinem* in patients undergoing surgical procedures in comparison to those who do not undergo surgery.[3,4]

Comorbidity of aortic stenosis and coronary heart disease is high, as our results over the last year indicate. The percentage of combined surgeries with aortic valve replacement (AVR) and aortocoronary bypass implantation (ACBP) was

FIGURE 1.

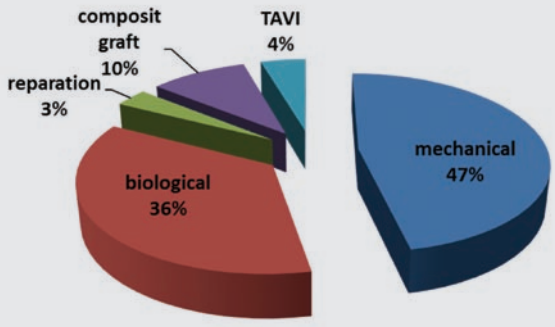


The ratio of cardiac surgery procedures on the aortic valve and the total number of cardiac surgery procedures in the Republic of Croatia in 2014.

je nešto niži u usporedbi s podatcima nekih europskih registara. Supostojanje uz aortnu bolest i koronarne bolesti srca ide i do 37% kod teških aortnih stenoza, a kod umjerenih i blagih aortnih stenoza čak i više. Nemamo podataka o ovim odnosima u našoj populaciji.

Tipovi kirurških zahvata u 2014. godini u Hrvatskoj prikazani su na **slici 3**. Dominantna je zamjena aortnog zalistka, bilo mehaničkim bilo biološkim zalistcima. Postoji blaga prevaga mehaničkih zalistaka u odnosu prema biološkima. U manjem postotku (3%) prisutni su i reparacijski zahvati, odnosno popravci aortnog zalistka. Popravci aortnog zaliska još uvijek su rezervirani za aortnu regurgitaciju čija je prevalencija manja (**slika 4**). Drugi razlog malog broja popravaka jest sama kompleksnost zahvata. Sa standardizacijama dviju tehnika (operacije po Davidu Tirone ili operacije po Yacoubu, tj. njezine modifikacije po Emmanuelu Lansacu) može se očekivati porast popravaka aortnog zalistka, umjesto njegove zamjene

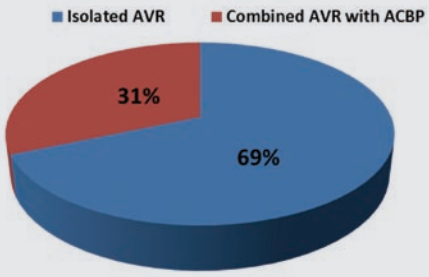
FIGURE 3.



Types of aortic valve surgical procedures in 2014 in the Republic of Croatia.

TAVI = Transcatheter Aortic Valve Implantation

FIGURE 2.



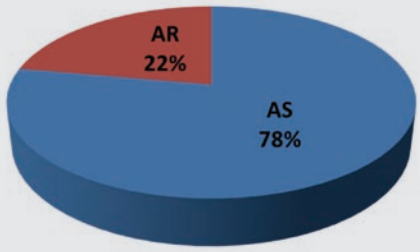
The ratio of isolated and combined aortic valve replacements (AVR) with aortocoronary bypass (ACBP) and other valves in 2014 in the Republic of Croatia.

AVR = aortic valve replacement; ACBP = aortocoronary bypass

31%, and the percentage of isolated aortic valve replacement procedures was 69% (**Figure 2**). The prevalence of combined aortic valve procedures is still somewhat lower in comparison with data from some European registries. Coexistence of aortic disease and coronary heart disease can be up to 37% in severe aortic stenosis cases, and even higher in moderate and mild aortic stenosis. We do not have any data on these relationships in our population.

The types of surgical procedures performed in 2014 in Croatia are shown in **Figure 3**. Aortic valve replacement, using either mechanical or bioprosthetic valves, is the most common. Mechanical valves are slightly more common than bioprosthetic valves. Aortic valve repair is also present in small numbers (3%). Aortic valve repair is still reserved for aortic regurgitation, which has a lower prevalence (**Figure 4**). The other reason for the small number of aortic valve repair procedures is the complexity of the procedure. With the standardization of two techniques (the David Tirone procedure and Yacoubu procedure, i.e. its modification by Emmanuel Lansac) we can expect an increase in aortic repair instead of replacement. Implantation of composite grafts in the ascending aorta ac-

FIGURE 4.



Reasons for aortic valve surgical procedures in 2014 in the Republic of Croatia.

AS = aortic stenosis; AR = aortic regurgitation

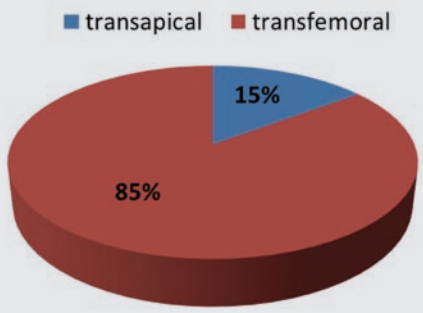
umjetnim. Ugradnja kompozitnih graftova na ascendentnoj aorti činila je 10% svih zahvata na aortnom zalistku. Relativno je bio mali broj TAVI (engl. *transcatheter aortic valve implantation*) zahvata u usporedbi s ostalim zahvatima.

Ugradnja aortnih zalistaka putem katetera

Od prve ugradnje aortnog zalistka putem katetera (TAVI) u Hrvatskoj prošlo je tri godine i o njima smo opširnije pisali u prethodnom uvodniku 2012. godine.[1] Broj centara koji se u međuvremenu okušao u ovoj, novoj tehnici rješavanja teške aortne stenoze popeo se na četiri, ali je broj pojedinačnih implantacija u svakome pojedinačnom centru u okvirima niskog volumena, a u nekima se kreće u okvirima brojki koje nisu prešle broj prstiju jedne ruke. Iako broj TAVI zahvata upućuje na trend znatnog porasta u odnosu prema prethodnim godinama, još uvijek smo u fazi krivulje učenja, jer je u 2014. god. obavljeno samo 29 TAVI zahvata.

Iz ovih podataka svakako treba iščitati težnju hrvatskih centara da slijede svjetske trendove u kojima se događa snažna ekspanzija ovih intervencija na račun kirurških zahvata. O kakvim je trendovima riječ, mogu nam najbolje pokazati rezultati *AQUA Institute GmbH* iz 2009. i 2012. god., prema kojima je u 2009. u Njemačkoj učinjeno 10 285 kirurških zahvata i 2565 TAVI-ja, a tri godine poslije, 2012., taj se omjer gotovo izjednačio s kiruršim zamjenama aortnog zalistka kojih je bilo 9929, u usporedbi s TAVI kojih je bilo 9341.[5,6] Glavni ograničavajući faktor u hrvatskim centrima u zbrinjavanju inoperabilnih pacijenata s teškom aortnom stenozom jest ekonomska situacija. Na ovom području svakako će trebati pronaći modalitete da se postigne standard liječenja koji pruža suvremena medicinska struka. Odnos endovaskularnog, odnosno transfemoralnog pristupa (**slika 5**) dominantan je u odnosu prema transapikalniom pristupu, i to bitno u prilog prvog (83% transfemoralnim putem prema 17% transapikalnom putem). Pojedinačni izvještaji govore o prihvatljivom broju komplikacija i smrtnosti.

FIGURE 5.



Transcatheter aortic valve implantation (TAVI) procedures with regard to the type of the approach in the Republic of Croatia in 2014.

counted for 10% of all aortic valve surgeries. There were relatively few transcatheter aortic valve implantation (TAVI) procedures in comparison with other procedures.

Transcatheter aortic valve implantation

It has been three years since the first transcatheter aortic valve implantation in Croatia, and we wrote more extensively about this procedure in a previous editorial in 2012.[1] The number of centers that have tried their hand at this new treatment technique for severe aortic stenosis has since grown to four, but the number of individual implantations in each center is very low, and is sometimes below five. Although the number of TAVI procedures indicates a significant upward trend in comparison with previous years, we are still in the learning phase since only 29 TAVI procedures have been performed in 2014.

These data should definitely be taken to indicate that Croatian centers strive to follow the global trend of rapidly increasing preference for these interventions as a replacement for surgical procedures. This trend is best illustrated by results from *AQUA Institute GmbH* in 2009 and 2012, according to which 10 285 surgical procedures and 2565 TAVI procedures were performed in Germany in 2009, whereas three years later, in 2012, the ratio of TAVI to surgical procedures has become almost one-to-one, with 9929 surgical aortic valve replacements compared with 9341 TAVI procedures.[5,6] The main limiting factor in caring for inoperable patients with severe aortic stenosis is the economic situation. It will certainly be necessary to come up with modalities that will allow us to reach the treatment standard provided by cutting-edge medical treatment elsewhere in the world. The endovascular, i.e. transfemoral approach is dominant in comparison with the transapical approach (**Figure 5**), significantly so (83% transfemoral compared with 17% transapical). Individual reports indicate an acceptable likelihood of complications and mortality.

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