

THE HEART AT STAKE

Despite a significant drop in mortality rates, cardiovascular diseases remain the number-one cause of death in Poland. Funding for novel procedures, such as transcatheter aortic valve implantation (TAVI), is nevertheless insufficient, compared to the scale of the problem in Poland and average implantation rates in Europe. That is one of the factors motivating the European Society of Cardiology's and European Association for Percutaneous Cardiovascular Interventions "Valve for Life" Initiative

TAVI procedure
underway
in a hybrid
operating room

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Although Poland remains at the forefront of cardiology in Europe, cardiovascular diseases remain the underlying cause of nearly half of all deaths in our country. We have undoubtedly succeeded in achieving one of the highest interventional treatment rates for acute coronary syndromes in Europe and in the world, including the treatment of myocardial infarction using primary percutaneous coronary interventions (PCI). Over less than two decades, we have witnessed a rise in the number of interventional cardiology centers (currently 160, including more than 150 on duty 24 hours/7 day a week) and well-trained specialists in the field. However, new treatment modalities in cardiology keep emerging, but modern and very effective transcatheter therapies prove insufficient in Poland. For example, this pertains to the use of new technologies in the treatment of valvular heart disease, also in elderly patients with severe aortic stenosis who are not eligible for traditional valve replacement surgery. Such patients are candidates for less invasive procedures such as TAVI.

The world's first transcatheter aortic valve implantation was performed in 2002 by the French cardiologist Alain Cribier. In Poland, the first such procedures were performed in 2008. The procedure is usually done via a small incision in the femoral artery, thus eliminating the need for opening the chest and putting the patient on a heart-lung bypass machine, as is necessary in cardiac surgeries. In other words, transcatheter aortic valve replacement may be described as a "keyhole" procedure. Decision-making as to which patients qualify for TAVI is always a result of discussions in a "heart team" – the cardiologist and the cardiac surgeon discuss the best treatment for patients with aortic stenosis. Both are usually involved in the procedure.

Facing an aging population

Since TAVI procedures are discussed in the context of elderly patients, it is worth realizing several demographic facts shown by the statistics and forecasts published by Poland's Central Statistical Office (GUS). At the end of 2013, Poland had a population of 38.5 million, including 5.7 million (14.7%) of inhabitants aged 65+. In 2050, this group is expected to rise significantly and account for 32.7% of the general population (12.5 million people). In 2013, those aged 80+ accounted for 4% of the general population (nearly 1.5 million people). They formed the most rapidly growing age group in the years 1989-2013. Such growth will continue until 2050: people from the age group 80+ will then account for 10.4% of the general population, which works out as 3.5 million individuals.



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A balloon-inflated bioprosthetic aortic valve used in TAVI

According to the Central Statistical Office's estimates, rising life expectancy will play an important role in increasing the share of people aged 65 and more. According to its forecasts, a man born in Poland in 2050 will live around 81.1 years on average, which means nine years more than in 2013. Average life expectancy for women, in turn, will be 87.5 years, which means 6.4 years more than today. Consequently, the life expectancy of those who will be 65 or older in 2050 will be correspondingly higher.

Since the percentage of elderly people in the general population is expected to grow, there will be also more patients who suffer from aortic stenosis, whose share in cardiovascular diseases grows with age. We can conclude from these facts that demand for both cardiac surgeries and TAVI procedures will rise visibly as well. According to the data collected by the European Society of Cardiology (ECS), 4.6% of Europe's population aged 75+ have aortic stenosis. In this group, around 10% suffer from very severe stenosis, which makes them candidates for valve replacement. However, 30-40% will not undergo surgery, because the risk of complications will be too high. If we extrapolate from these data to draw conclusions that pertain to the Polish population, around 2,070 patients in Poland aged 80+ will require TAVI in 2030. In 2050, their number will increase to 4,830. In the age group 65+, the numbers are 7,866 and 17,370 respectively.

Getting to 2,000 procedures

Unfortunately, this novel method of treatment is not common in Poland. Only 381 TAVI procedures were performed in Poland in 2013, compared to 452 in 2014, and 670 which means slightly over 17 per million people. In 2014, the average in the "old" EU countries was 50-60 TAVI procedures per million inhabitants (165 in Germany, 58 in the Netherlands, 46 in the Scandinavian countries, and 27 in Belgium).

In order to reach the EU average, we should perform around 2,000 TAVI procedures a year, which means over 1,500 more than today. Given that Poland has a reported an economic growth rate of 3.5% in recent years and a recent report of the National Bank of Poland (NBP) indicates that this pace is likely to continue also in 2016, it would appear that there is a certain potential for improving access to TAVI procedures for patients. Let us use Germany as an example: Poland's GDP per capita is nearly two times lower than Germany's GDP per capita, but the number of TAVI procedures per million inhabitants in Poland is 9.7 times lower than in Germany in 2015.

It is difficult to logically explain such a considerable disproportion. In the light of the economic situation, no one expects Poland to reach such a high rate of TAVI procedures as Germany, but it does seem realistic and possible to reach the European average, or 50 procedures per million inhabitants, in such a rapidly developing country as Poland. Unfortunately, Polish medicine cannot hope for major changes in the treatment of cardiovascular diseases without adequate funding from the Health Ministry and the National Health Fund (NFZ) being allotted to the development and application of modern treatment methods in Poland.

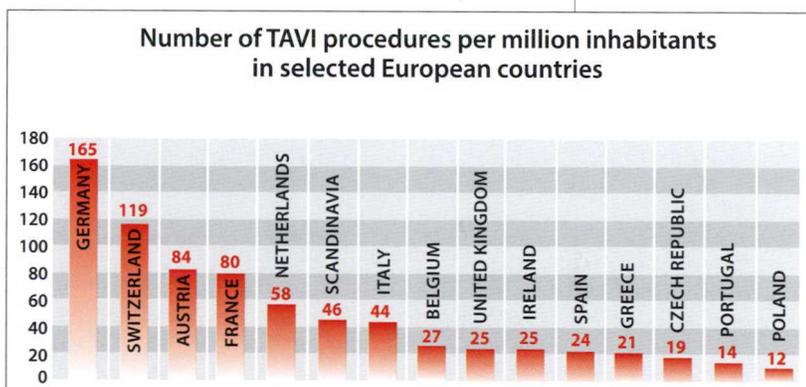
A strategy for reaching this European average could be defined for example in a five-year plan that would provide for increasing the number of valve replacement procedures at a pace of 300 a year and later maintaining it at around 2,000 a year. Given today's prices of the valves used in TAVI procedures and the costs of hospitalization, estimated spending on such a program will have to grow steadily and significantly. Needless to say, the number of TAVI procedures in Poland should rise correspondingly in the years to come in connection with the growing number of patients requiring aortic valve replacement.

Efforts to combat cardiovascular diseases will not be effective without greater public awareness among both patients and their families. That is yet another reason why the Valve for Life Initiative was launched in 2015.

The year of raising awareness

The campaign is aimed at promoting, popularizing, and facilitating access to novel, less invasive methods

of treating valvular heart disease, including TAVI. In Europe, the campaign was initiated and funded by the European Society of Cardiology and its branch, the European Association of Percutaneous Cardiovascular Interventions (EAPCI). Since the beginning of August 2015, the ESC in collaboration with the Polish Cardiac Society (PCS) and the Association of Cardiovascular Interventions of the Polish Cardiac Society has been running a campaign scheduled to continue for one year. The campaign is aimed at making people aged 70+ and their children aware of the possibilities and benefits of TAVI procedures for patients who do not qualify for surgical treatment. Another purpose of the campaign is to make people aware that TAVI procedures may not only help patients maintain physical health for longer but also extend their lives. The best examples are patients aged 90+ who have undergone TAVI procedures and can still function effectively in family and social life, without risking sudden cardiac death.



The face of the campaign is Mr. Emil Karewicz, a popular actor best known from the iconic series *Stawka większa niż życie* ("More Than Life at Stake"). Internet users can already watch short spots featuring Karewicz, which are also broadcast by national and local networks. Inhabitants of the largest cities in Poland can find out more about the campaign from city light advertisements at bus stops and posters on public transport. The campaign also includes a series of articles, interviews, and debates in newspapers, on radio, and in television. More information is available on the campaign's website: www.stawkatozycie.pl.

Hopefully, the social campaign will soon create a good atmosphere for talks with those in charge of health care in Poland and help facilitate broader access to modern, less invasive technologies in the treatment of valvular heart disease, particularly TAVI procedures.

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