Co je nového v guidelines ESC pro chlopenní vady 2017

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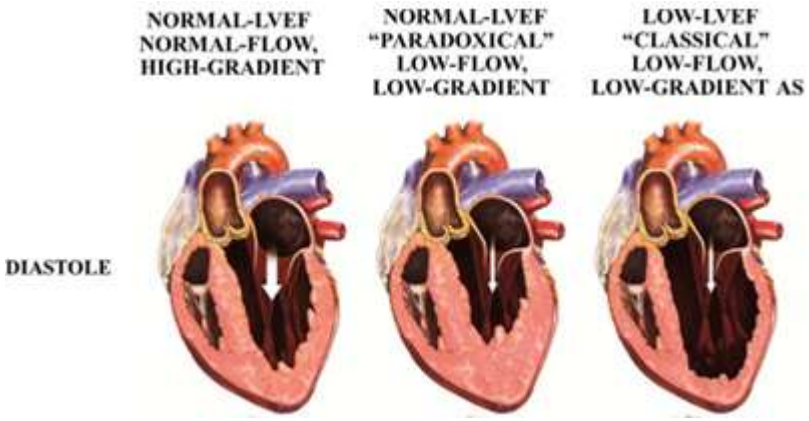
Aortální stenóza - novinky/ změny oproti verzi 2012

- zhodnocení významnosti AS (low gradient)
- indikace k intervenci (low gradient AS, asymptomatická aortální stenoza)
- volba typu intervence (SAVR vs. TAVI vs.BAV)

Zhodnocení významnosti AS



SVI> 35 ml/m2

SVI< 35 ml/m2

Zhodnocení – doporučení echokardiografie 2011

Low gradient AS

- heterogenní populace zahrnující pacienty s významnou i středně významnou AS
- chyby v měření, nekonzistence měření AVA a gradientů jsou hlavními zdroji špatné klasifikace (nadhodnocení AS)
- zhodnocení zůstává výzvou

Criteria that increase the likelihood of severe AS in pts. with AVA <1.0 cm², mean gradient < 40 mmHg and preserved EF

(Baumgartner et al)

Criteria	
Clinical criteria	• Typical symptoms without other explanation. • Elderly patient (>70 years).
Qualitative imaging data	• LV hypertrophy (additional history of hypertension to be considered). • Reduced LV longitudinal function without other explanation.
Quantitative imaging data	• Mean gradient 30–40 mmHg.
	• AVA ≤0.8 cm².

Criteria that increase the likelihood of severe AS in pts. with AVA < 1.0 cm², mean gradient < 40 mmHg and preserved EF

(Baumgartner et al)

Criteria *(continued)*	
Quantitative imaging data *(continued)*	• Low flow (SVi <35 mL/m²) confirmed by techniques other than standard Doppler technique (LVOT measurement by 3D TOE or MSCT; CMR, invasive data).
	• Calcium score by MSCT: – Severe aortic stenosis very likely: men ≥3000; women ≥1600, – Severe aortic stenosis likely: men ≥2000; women ≥1200, – Severe aortic stenosis unlikely: men <1600; women<800.

Symptomatická AS
LF-LG a redukovaná EF bez kontraktilní rezervy

Changes in recommendations	
2012	**2017**
Indications for intervention in symptomatic aortic stenosis	
IIb C Intervention may be considered in symptomatic patients with low-flow, low-gradient aortic stenosis and reduced ejection fraction without flow (contractile) reserve.	**IIa C** Intervention should be considered in symptomatic patients with low-flow, low-gradient aortic stenosis and reduced ejection fraction without flow (contractile) reserve, particularly when CT calcium scoring confirms severe aortic stenosis.

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Symptomatická AS
LF-LG a normální EF- potvrzení dg.!!

Recommendations	Class	Level
a) Symptomatic aortic stenosis		
Intervention is indicated in symptomatic patients with severe, high-gradient aortic stenosis (mean gradient ≥40 mmHg or peak velocity ≥4.0 m/s).	I	B
Intervention is indicated in symptomatic patients with severe low-flow, low-gradient (<40 mmHg) aortic stenosis with reduced ejection fraction, and evidence of flow (contractile) reserve excluding pseudo-severe aortic stenosis.	I	C
Intervention should be considered in symptomatic patients with low flow, low-gradient (<40 mmHg) aortic stenosis with normal ejection fraction after careful confirmation of severe aortic stenosis.	IIa	C

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Symptomatická AS
LF-LG, redukovaná EF, bez kontraktilní rezervy

Recommendations	Class	Level
Intervention should be considered in symptomatic patients with low-flow, low-gradient aortic stenosis and reduced ejection fraction without flow (contractile) reserve, particularly when CT calcium scoring confirms severe aortic stenosis.	IIa	C
Intervention should not be performed in patients with severe comorbidities when the intervention is unlikely to improve quality of life or survival.	III	C
b) Choice of intervention in symptomatic aortic stenosis		
Aortic valve interventions should only be performed in centres with both departments of cardiology and cardiac surgery on-site, and with structured collaboration between the two, including a Heart Team (heart valve centres).	I	C

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Asymptomatická AS
Laboratorní markery, zátěžové testy, hypertrofie LK

Changes in recommendations	
2012	**2017**
Indications for surgery in asymptomatic aortic stenosis	
IIb C Markedly elevated BNP levels.	**IIa C** Markedly elevated BNP levels (>threefold age- and sex-corrected normal range) confirmed by repeated measurements without other explanations.
IIb C Increase of mean pressure gradient with exercise by >20 mmHg.	Taken out
IIb C Excessive LV hypertrophy in the absence of hypertension.	Taken out

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Goublaire C et al. JACC 2017, Domanski O et al. Int. J Cardiol, 2017 excercise)
Clavel A et. al. JACC 2014 (BNP)

Asymptomatická AS
Zátěžové testy

Recommendations	Class	Level
SAVR should be considered in asymptomatic patients with severe aortic stenosis and abnormal exercise test showing fall in blood pressure below baseline.	IIa	C
SAVR should be considered in asymptomatic patients with normal ejection fraction and none of the above-mentioned exercise test abnormalities if the surgical risk is low and one of the following findings is present: – very severe aortic stenosis defined by a V_{max}>5.5 m/s, – severe valve calcification and a rate of V_{max} progression ≥0.3m/s/year, – markedly elevated BNP levels (>threefold age- and sex-corrected normalrange) confirmed by repeated measurements without other explanations, – severe pulmonary hypertension (systolic pulmonary artery pressure at rest >60 mmHg confirmed by invasive measurement) without other explanation.	IIa	C

(European Heart Journal 2017 - doi:10.1093/eurheartj/ehx391)

Asymptomatická AS
Těžká plicní hypertenze

2017 New recommendations
Diagnosis of severe aortic stenosis See new recommendations for the diagnosis of severe aortic stenosis (Figure and Table).
Indications for surgery in asymptomatic aortic stenosis
New IIa C recommendation: Severe pulmonary hypertension (systolic pulmonary artery pressure at rest >60 mmHg confirmed by invasive measurement) without other explanation.
Indications for intervention in asymptomatic severe primary mitral regurgitation **New additional statement:** If pulmonary hypertension (SPAP >50 mmHg at rest) is the only indication for surgery, the value should be confirmed by invasive measurement.

Micelli et al. , Int j Cardiol. 2013, Zlotnicki DM eet al. Am.J Cardiol, 2013

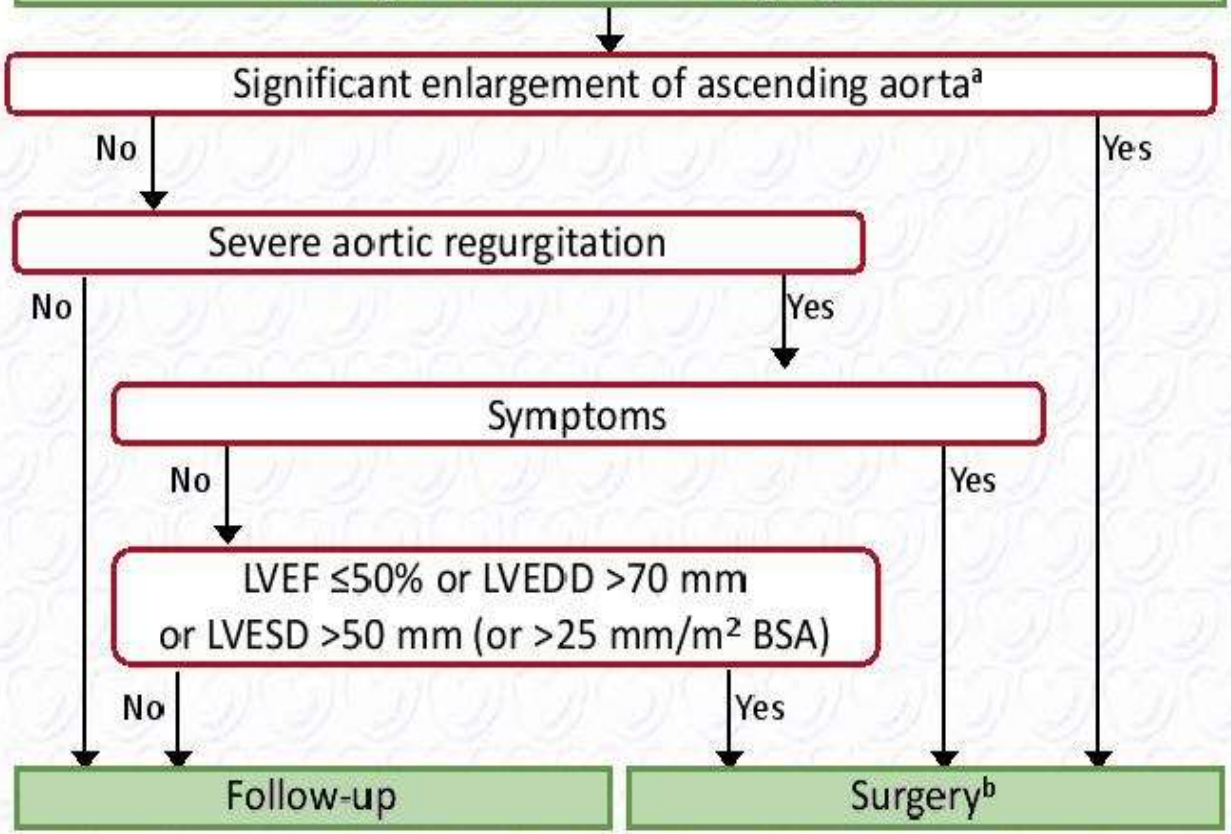
Aortální stenóza- klíčové body

- diagnostika významné AS : V max, TK gradient, velikost a funkci LK, kvantifikaci kalcifikací, TK a funkční stav pacienta
- nutná pečlivá diagnostika u pacientů s nízkým gradientem a zachovalou EF LK
- nejsilnějším indikačním kriteriem zůstávají symptomy (spontánní či při zátěžovém testu)
- přítomnost rychlé progrese nálezu by měla vést k úvaze AVR u asymptomatických pacientů s nízkým operačním rizikem
- TAVI x SAVR vždy po komplexním posouzení inviduálního rizika a přínosu výkonu „Heart teamem“

Nevyjasněné otázky u AS

- časné markery dysfunkce LKS a jejich vliv na prognózu
- identifikace pacientů s nízkým gradientem při významné AS a mohli by profitovat z výkonu
- identifikace asymptomatických pacientů, kteří by mohli profitovat z časné operace
- malá data ohledně dlouhodobého FU po TAVI
- kriteria rozhodování mezi TAVI a SAVR, TAVI u pacientů s nízkým rizikem??
- upřesnění kriterií, kdy už TAVI neprovádět

Management of aortic regurgitation



[a] *See table of recommendations for definitions of aortic diameter*

[b] *Surgery should also be considered if significant changes in LV and aortic size occur during FU (see table)*

Aortální regurgitace – plastiky chlopní
Aortální regurgitace- genetické mutace

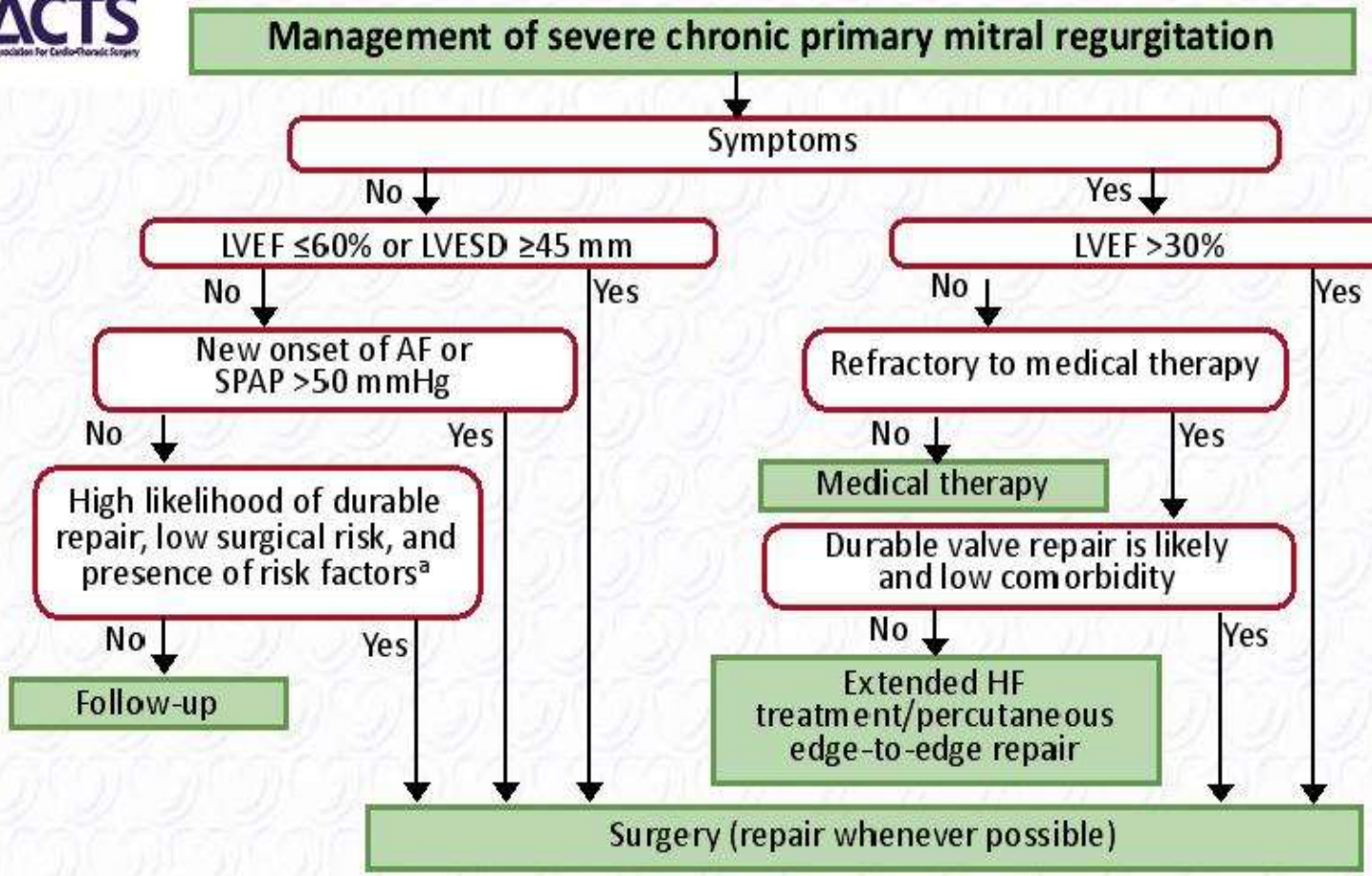
2017 New recommendations
Indications for surgery in severe aortic regurgitation and aortic root disease
New I C recommendations: Heart Team discussion is recommended in selected patients in whom aortic valve repair may be a feasible alternative to valve replacement. • Aortic valve repair, using the reimplantation or remodelling with aortic annuloplasty technique, is recommended in young patients with aortic root dilation and tricuspid aortic valves, when performed by experienced surgeons.
New IIa C recommendation: Surgery should be considered in patients who have aortic root disease with maximal ascending aortic diameter: ≥45 mmin patients with a *TGFBR1* or*TGFBR2* mutation (including Loeys-Dietz syndrome)*.
* *A lower threshold of 40 mm may be considered in women with low BSA, in patients with a TGFBR2 mutation, or in patients with severe extra-aortic features.*

Aortální regurgitace- klíčové body

- pečlivé zhodnocení morfologie, mechanismu a významnosti
- u asymptomatických pacientů s významnou AR systematický follow up
- nejsilnější indikační kritérium - přítomnost symptomů, pokles EF pod 50% a ESD ≥ 50 mm
- při dilataci aorty je klíčové přesné měření k načasování a určení typu výkonu (význam CT!!)
- záchovné operace u selektované skupiny pacientů na erudovaném pracovišti

Nevyjasněné otázky

- časné markery dysfunkce LKS a jejich vliv na pooperační prognózu
- kriteria pro rozhodování mezi AVR a plastikou- vyžadují důkladnější propracování
- upřesnění potencionálních rizik komplikací v závislosti na typu aneurysmatu aorty
- efekt medikamentosní léčby na dilataci aorty u pacientů s bikuspidální Ao chlopní vyžaduje další studie



[a] *LVESD ≥40 mm and one of the following present: flail leaflet or LA volume ≥60 mL/m² BSA at sinus rhythm*

Asymptomatická primární MR- rozměry LK
Asymtomatická primárním MR – zátěžové testy

Changes in recommendations	
2012 →	2017
Indications for intervention in asymptomatic severe primary mitral regurgitation	
IIb C Surgery may be considered in asymptomatic patients with preserved LV function, high likelihood of durable repair, low surgical risk, and: • Left atrial dilatation (volume index ≥60 mL/m² BSA) and sinus rhythm.	**IIa C (modified!)** Surgery should be considered in asymptomatic patients with preserved LVEF (>60%) and LVESD 40–44 mm when a durable repair is likely, surgical risk is low, the repair is performed in heart valve centres, and the following finding is present: presence of significant LA dilatation (volume index ≥60 mL/m² BSA) in sinus rhythm.
Pulmonary hypertension on exercise (SPAP ≥60 mmHg at exercise).	Taken out

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Trioulíloy et. al. JAAC 2009 (flail leaflet)
Le Tourneau et. al. JACC (LA size)

Sekundární mitrální regurgitace
Indikace k chirurgickému výkonu

Recommendations	Class	Level
Surgery is indicated in patients with severe secondary mitral regurgitation undergoing CABG and LVEF >30%.	I	C
Surgery should be considered in symptomatic patients with severe secondary mitral regurgitation, LVEF <30% but with an option for revascularization, and evidence of myocardial viability.	IIa	C
When revascularization is not indicated, surgery may be considered in patients with severe secondary mitral regurgitation and LVEF >30%, who remain symptomatic despite optimal medical management (including CRT if indicated) and have a low surgical risk.	IIb	C

Sekundární mitrální regurgitace
Indikace k chirurgickému výkonu - modifikace

Changes in recommendations	
2012	**2017**
Indications for mitral valve intervention in secondary mitral regurgitation	
IIa C Surgery should be considered in patients with moderate secondary mitral regurgitation undergoing CABG	**Taken out**
IIb C When revascularization is not indicated, surgery may be considered in patients with severe secondary mitral regurgitation and LVEF >30%,who remain symptomatic despite optimal medical management (including CRT if indicated).	**IIb C (modified)** When revascularization is not indicated, surgery may be considered in patients with severe secondary mitral regurgitation and LVEF >30%, who remain symptomatic despite optimal medical management (including CRT if indicated) and have a low surgical risk.

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Michler RE et al., NEJM 2016

Sekundární mitrální regurgitace
Indikace ke katetrizačnímu výkonu

Changes in recommendations	
2012	**2017**
Indications for mitral valve intervention in secondary mitral regurgitation *(continued)*	
	IIb C (modified) *(continued)* When revascularization is not indicated and surgical risk is not low, a percutaneous edge-to-edge procedure may be considered in patients with severe secondary mitral regurgitation and LVEF >30%, who remain symptomatic despite optimal medical management (including CRT if indicated) and who have a suitable valve morphology by echocardiography, avoiding futility.

Sekundární mitrální regurgitace
Indikace ke katetrizačnímu výkonu

Changes in recommendations	
2012	**2017**
Indications for mitral valve intervention in secondary mitral regurgitation *(continued)*	
	IIb C (modified) *(continued)* In patients with severe secondary mitral regurgitation and LVEF <30% who remain symptomatic despite optimal medical management (including CRT if indicated) and who have no option for revascularization, the Heart Team may consider percutaneous edge-to-edge procedure or valve surgery after careful evaluation for ventricular assist device or heart transplant according to individual patient characteristics.

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Sekundární mitrální regurgitace
Kvantifikace vady před intervencí

Changes in recommendations	
2012	**2017**
Indications for mitral valve intervention in secondary mitral regurgitation *(continued)*	
	Additional statement: The lower thresholds defining severe MR compared to primary MR are based on their association with prognosis. However, it is unclear if prognosis is independently affected by MR compared to LV dysfunction. For isolated mitral valve treatment in secondary MR, thresholds of severity of MR for intervention still need to be validated in clinical trials. So far, no survival benefit has been confirmed for reduction of secondary MR.

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Mitrální regurgitace- klíčové body

- stanovení etiologie MR, anatomie a funkce a zhodnocení významnosti vady
- indikace pro intervenci **primární mitrální regurgitace -** symptomy a stratifikace rizika (velikost a funkce komory, FS, SPAP a velikost LS
- **sekundární MR** – není jednoznačný mortalitní benefit po korekci. MVP (MVR) je indikována u pacientů se současnou indikací k CABG a může být zvažována u symptomatických pacientů při nedostatečném efektu léčby (medikamentozní a CRT) a u pacientů s nízkým operačním rizikem a revaskularizace není indikována
- preference je MVP, význam zkušenosti centra
- perkutánní intervence může být zvažována u pacientů s vysokým operačním rizikem

Nevyjasněné otázky

- elektivní MVP u asymptomatických pacientů s normální velikostí LK, EF a bez přítomnosti PH
- význam časných markerů LV dysfunkce
- hodnota definující významnou sekundární MR ???
- význam intervence (chirurgické či katetrizační) na přežívání pacientů
- další vývoj katetrizačních technik (katetri či implantace chlopní)

Různá doporučení - novinky

CT koronorografie
PCI pře intervenčími výkony na chlopních

2017 New recommendations
Management of CAD in patients with VHD
New IIa C recommendations: • CT angiography should be considered as an alternative to coronary angiography before valve surgery in patients with severe VHD and low probability of CAD, or in whom conventional coronary angiography is technically not feasible or associated with a high risk. • PCI should be considered in patients with a primary indication to undergo TAVI and coronary artery diameter stenosis >70% in proximal segments. • PCI should be considered in patients with a primary indication to undergo transcatheter mitral valve interventions and coronary artery diameter stenosis >70% in proximal segments.
Management of atrial fibrillation in VHD **New additional recommendations:** See new Table *"Management of atrial fibrillation in patients with VHD"* Section 3.7.2.

Antitrombotická léčba u pacientů s náhradami a konkomitantní ICHS

Changes in recommendations	
2012	**2017**
Indications for antithrombotic therapy in patients with a prosthetic heart valve or valve repair	
IIa C The addition of low-dose aspirin (75–100 mg/day) to VKA should be considered in the case of concomitant atherosclerotic disease.	**IIb C** The addition of low-dose aspirin (75–100 mg/day) to VKA may be considered in the case of concomitant atherosclerotic disease.

Antikoagulační léčba u pacientů s náhradami
Selfmonitoring

2017 New recommendations
Management after valve intervention **New recommendations:** After transcatheter as well as surgical implantation of a bioprosthetic valve, echocardiography – including the measurement of transprosthetic gradients -should be performed within 30 days (preferably around 30 days for surgery) after valve implantation (i.e. baseline imaging), at 1 year after implantation, and annually thereafter.
Indications for antithrombotic therapy in patients with a prosthetic heart valve or valve repair. **New recommendations:**
I B • INR self-management is recommended provided appropriate training and quality control are performed.

Triple terapie u pacientů s ICHS a chlopenní náhradou
Nízké x vysoké riziko krvácení

2017 New recommendations

IIa B

- In patients treated with coronary stent implantation, triple therapy with aspirin (75-100 mg/day), clopidogrel (75 mg/day), and VKA should be considered for 1 month, irrespective of the type of stent used and the clinical presentation (i.e. ACS or stable CAD).
- Triple therapy comprising aspirin (75-100 mg/day), clopidogrel (75 mg/day), and VKA for longer than 1 month and up to 6 months should be considered in patients with high ischaemic risk due to ACS or other anatomical/procedural characteristics that outweigh the bleeding risk.

IIa A

- Dual therapy comprising VKA and clopidogrel (75 mg/day) should be considered as an alternative to 1-month triple antithrombotic therapy in patients in whom the bleeding risk outweighs the ischaemic risk.

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Hladina INR u pacientů s triple terapií,
Duální terapie po TAVI,NOAK u mechanických náhrad

2017 New recommendations
IIa B • In patients who have undergone PCI, discontinuation of antiplatelet treatment should be considered at 12 months. • In patients requiring aspirin and/or clopidogrel in addition to VKA, the dose intensity of VKA should be carefully regulated with a target INR in the lower part of the recommended target range and a time in therapeutic range >65–70%.
IIa C • Dual antiplatelet therapy should be considered for the first 3–6 months after TAVI, followed by lifelong single antiplatelet therapy in patients who do not need oral anticoagulation for other reasons.
IIb C • Single antiplatelet therapy may be considered after TAVI in the case of high bleeding risk.
III B • The use of NOACs is contraindicated in mechanical valves.

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Léčba trombóz u bioprotéz, okludery u paravalvulárních leaků , katetrové valve in valve

2017 New recommendations
Management of prosthetic valve dysfunction **New recommendations:**
I C Anticoagulation using a VKA and/or UFH is recommended in bioprosthetic valve thrombosis before considering reintervention.
I C Reoperation is recommended if paravalvular leak is related to endocarditis or causes haemolysis requiring repeated blood transfusions or leading to severe symptoms.
IIb C Transcatheter closure may be considered for paravalvular leaks with clinically significant regurgitation in surgical high-risk patients (Heart Team decision).
IIa C Transcatheter valve-in-valve implantation in aortic position should be considered by the Heart Team depending on the risk of reoperation and the type and size of prosthesis.

Děkuji za pozornost