



GÖĞÜS KALP DAMAR ANESTEZİ
VE YOĞUN BAKIM DERNEĞİ

27. *Ulusal*
Kongresi

24 - 25 Eylül 2021 Wyndham Grand İzmir Özdilek



**Aort stenozlu olgularda anestezi
yönetimi**

Nesrin Bozdoğan



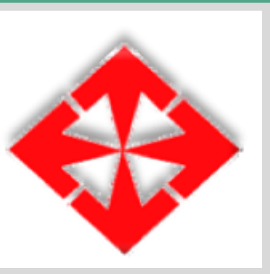


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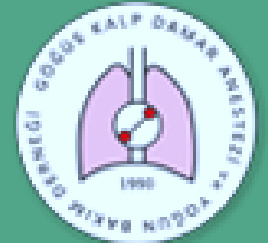
Non-kardiyak Cerrahide Kardiyak Sorunlar

Aort Stenozlu Olgularda

Anestezi Yönetimi



Dr. Nesrin BOZDOĞAN ÖZYILKAN
Başkent Üniversitesi Tıp Fakültesi
Anesteziyoloji ve Reanimasyon Anabilim Dalı



Aort Stenozu - Genel Bakış



- **Aort stenozu (AS)** Avrupa ve Kuzey Amerika'da en sık müdahale gerektiren kapak hastalığı
- 65 yaş üzerinde %4-5, ülkemizde %6 sıklıkta
- Yaşlanan nüfusla birlikte daha sık karşımıza çıkmakta

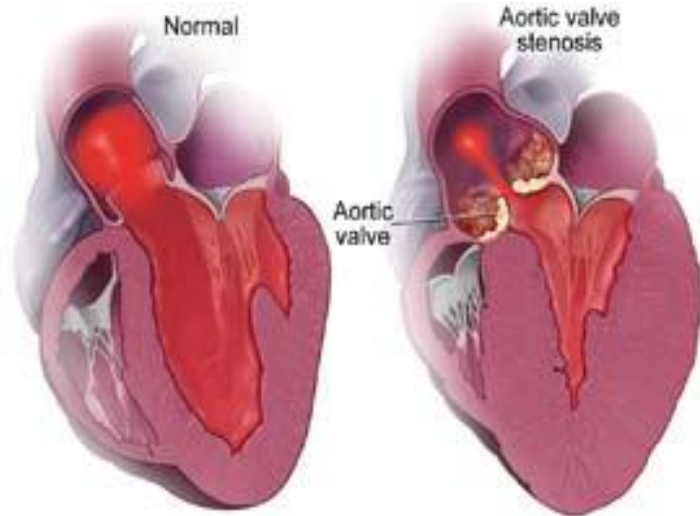
Aort Stenozu – Genel Bakış



Non-kardiyak cerrahiler için en önemli risk faktörü !!!

Aort Stenozu - Tanım

- Normal aort kapak alanı 2.5-3.5 cm² (2-4 cm²)
- Sol ventrikül (LV) çıkış yolunun değişik düzeylerine lokalize olan ve ventrikülün sistolik ejeksiyon fonksiyonunu engelleyen bir obstrüksiyon
- Supravalvüler, subvalvüler ve valvüler



NORMAL AORTIC VALVE

Open



Closed



AORTIC VALVE STENOSIS

Open



Closed



Aort Stenozu - Etiyoloji

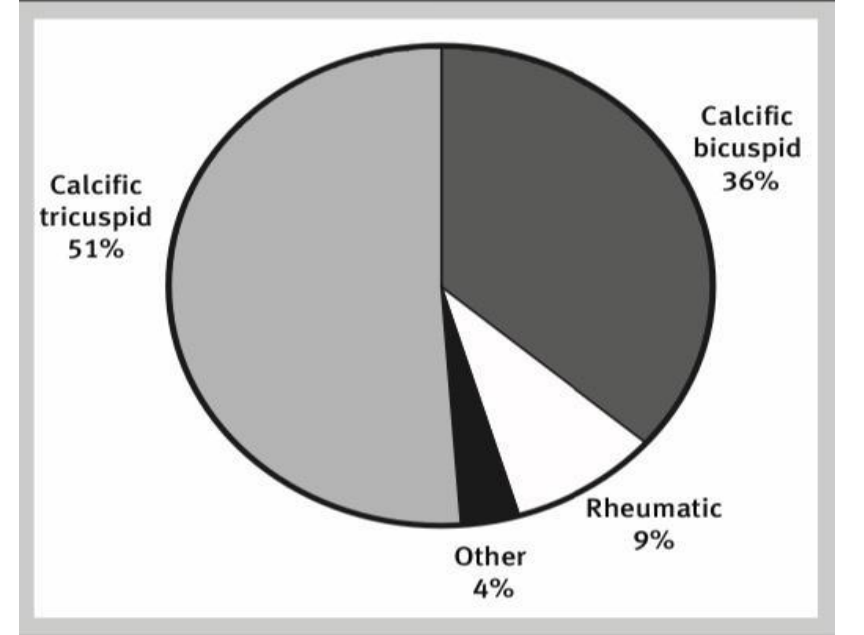
CLINICAL PRACTICE GUIDELINE: FULL TEXT

2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease

A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines



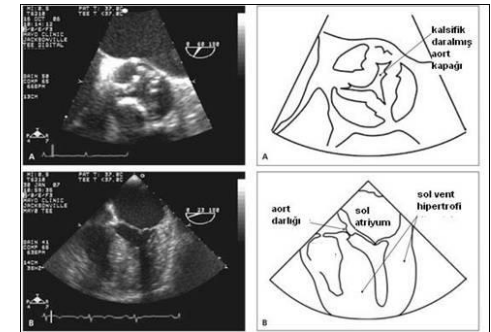
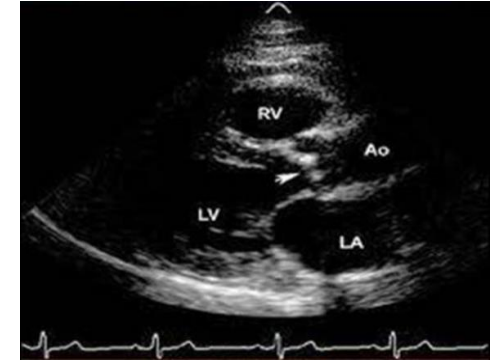
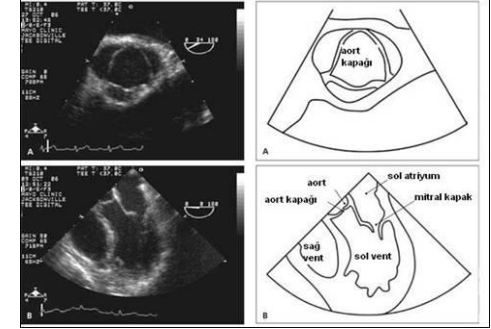
- Yaşla birlikte değişmekte
- Konjenital: uniküspit kapak, biküspit kapak
- Dejeneratif/senil
- Romatizmal
- Nadir nedenler: RA, SLE, Paget hastalığı



Aort Stenozu - Sınıflandırma

Ekokardiyografi ölçüm parametrelerine göre AS ciddiyeti sınıflandırması

	Hafif AS	Orta AS	Ciddi AS
Pik Velosite, Vmax (m/sn)	2.0-2.9	3.0-3.9	≥ 4
Ortalama Gradyent (mmHg)	<20	20-39	≥ 40
Kapak Alanı (cm ²)	>1.5	1.0-1.5	<1.0
Kapak Alan İndeksi (cm ² /m ²)	>1.0	0.6-0.9	<0.6



Aort Stenozu - Klinik Sınıflaması

Yüksek Gradyentli AS

- Kapak alanı $<1 \text{ cm}^2$
- Ort. grad. $>40 \text{ mmHg}$
- LVEF ve akım normal ya da azalmış

• **Ciddi AS**

Düşük-akım, Düşük-gradyent AS

- Kapak alanı $<1 \text{ cm}^2$
- Ort. grad. $<40 \text{ mmHg}$
- LVEF $< \% 50$
- SVİ $< 35 \text{ mL/m}^2$

• **Psödo-ciddi AS**

Düşük-akım, Düşük-gradyent AS

- Kapak alanı $<1 \text{ cm}^2$
- Ort. grad. $<40 \text{ mmHg}$
- LVEF $> \% 50$
- SVİ $< 35 \text{ mL/m}^2$

• **Genelde yaşlılarda**

Normal akım, Düşük gradiyet AS

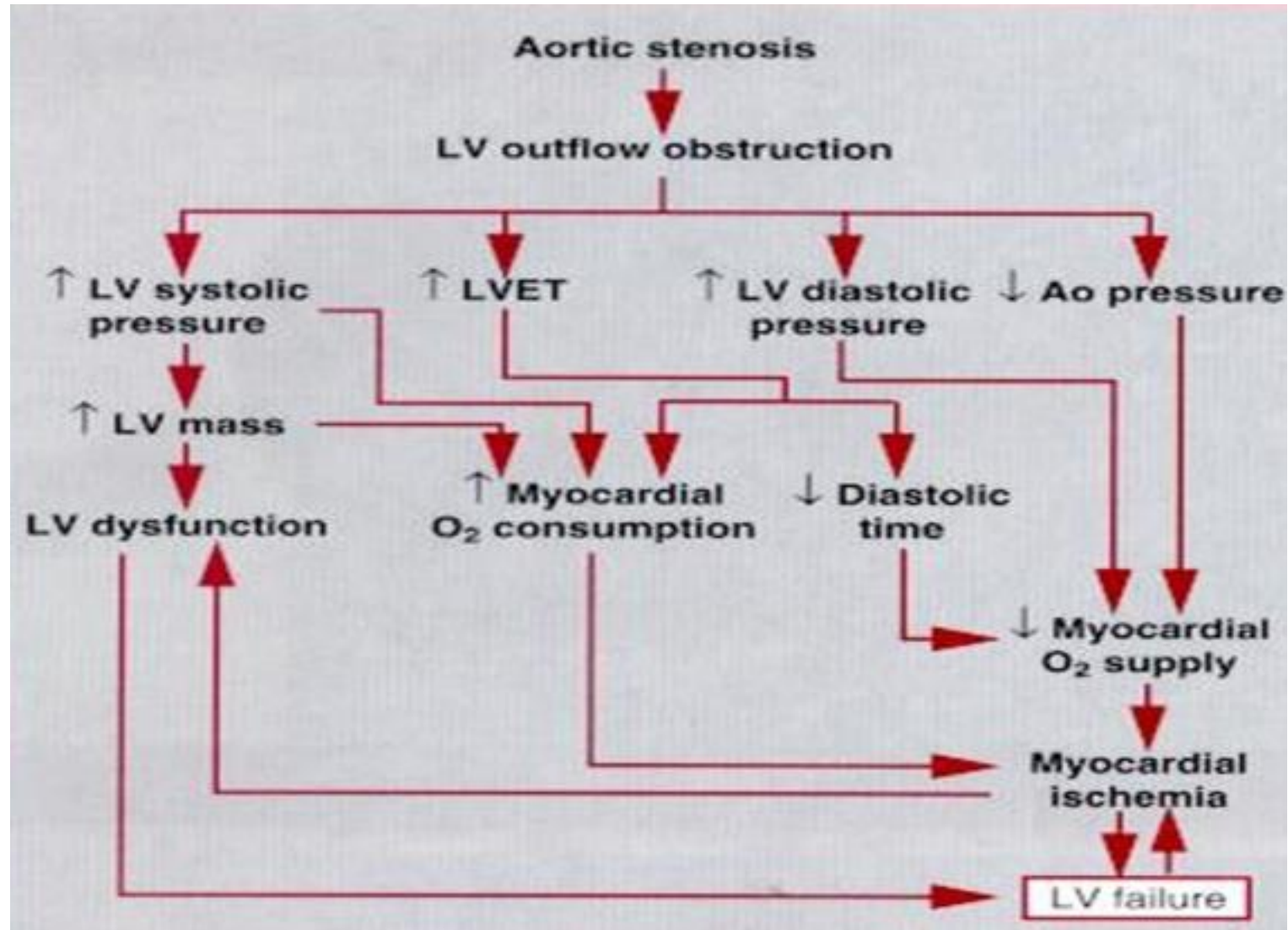
- Kapak alanı $<1 \text{ cm}^2$
- Ort. grad. $<40 \text{ mmHg}$
- LVEF $> \% 50$
- SVİ $> 35 \text{ mL/cm}^2$

• **Orta derecede AS**

Aort Stenozu – Patofizyoloji

Aortic Stenosis

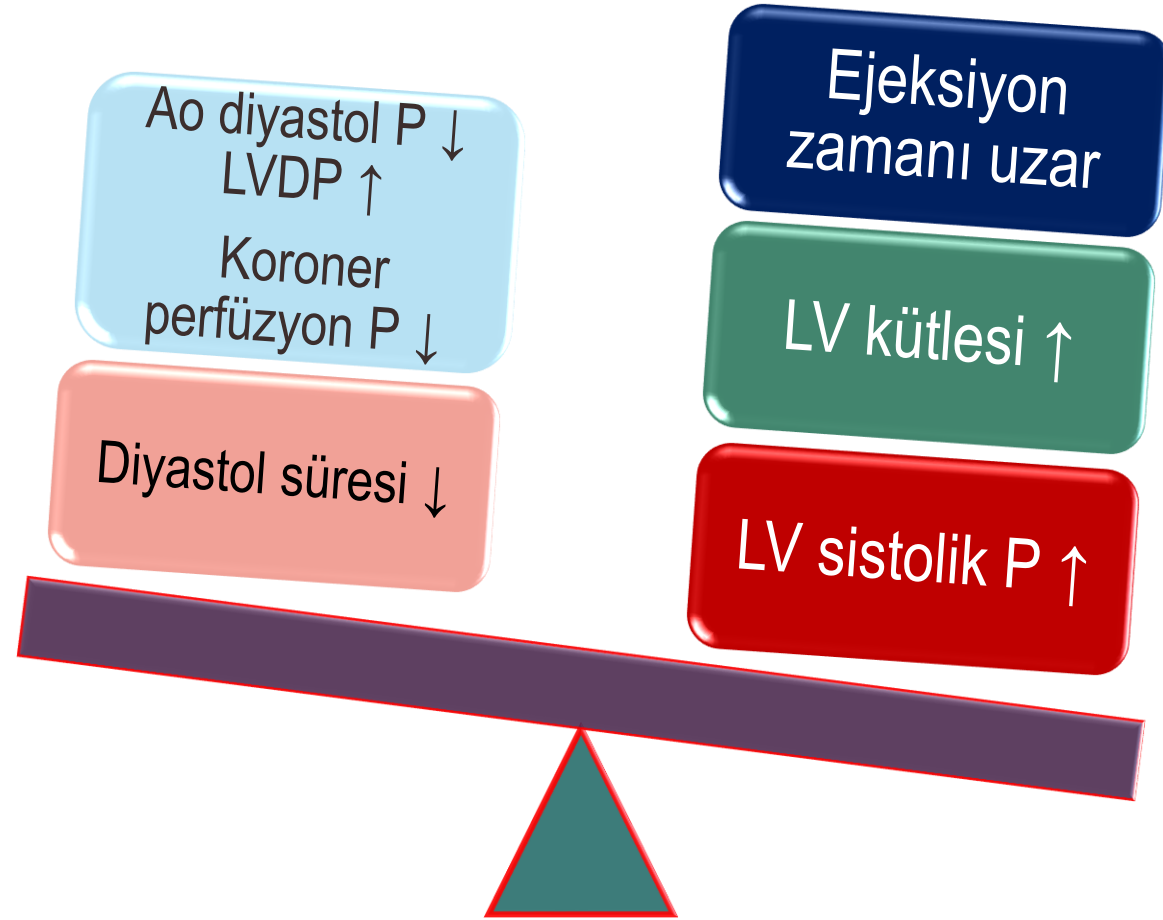
Guy P. Armstrong, MD, North Shore Hospital, Auckland Feb 2020



Aort Stenozu - Patofizyoloji

Myokarda
O₂ Sunumu

Myokardın
O₂ İhtiyacı



Preoperatif Değerlendirme - Kılavuzlar



2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery
A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines
Developed in Collaboration With the American College of Surgeons, American Society of Anesthesiologists, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Anesthesiologists, and Society of Vascular Medicine
Endorsed by the Society of Hospital Medicine

1996-AHA
2014 –
AHA/ACC

 
©2014 ESC/ESA Kalp Dışı Cerrahi Kılavuzu:
Kardiyovasküler değerlendirme ve yönetim
Kalp Dışı Cerrahiye İlişkin Birleşik Görev Grubu: Avrupa Kardiyoloji Derneği'nin (ESC) kardiyovasküler değerlendirme ve yönetim grubu ve Avrupa Anesteziyoloji Derneği (ESA)

2014-ESA

  
Canadian Journal of Cardiology 33 (2017) 17–32
Society Guidelines
Canadian Cardiovascular Society Guidelines on Perioperative Cardiac Risk Assessment and Management for Patients Who Undergo Noncardiac Surgery

2017-CCA

Goldman Kardiyak İndeksi

Hastanın skor kriterleri	Puanlar
Yaş >70	5
Mİ < 6 ay	10
Üçüncü kalp sesi veya gallop ritmi	11
Aort darlığı	3
Sinüs dışında ritim veya atriyal ektopik atımlar	7
Dakikada >5 ventriküler ektopik atım	7
Aşağıdaki genel durum bozukluklarından herhangi birinin olması; PO ₂ <8kPa (<60 mmHg) veya PCO ₂ >6.7 kPa (>50 mmHg) K ⁺ <3.0 mmol/L veya Bikarbonat <20 mmol/L Kan üre nitrojeni (BUN) >8.3 mmol/L veya kreatinin >270 mmol/L Anormal karaciğer enzimleri veya kronik karaciğer hastalığı belirtileri Kardiyak olmayan nedenlerle yatalak olan hasta	3
İntraperitoneal, intratorasik veya aortik cerrahi	3
Acil ameliyat	4
Toplam olası skor	53

Detsky'nin Kardiyak Risk İndeksi

Skor kriterleri	Puan
Yaş >70	5
Mi <6 ay	10
Mi >6 ay	5
Stabil olmayan angina <3 ay	10
Pulmoner ödem <1 hafta	10
Pulmoner ödem (herhangi bir zamanda)	5
Sinüs ritmi ve prematür atriyal atım	5
Sinüs olmayan ritim veya prematür ventriküler atım	5
CCVSA Sınıf III	10
CCVSA Sınıf IV	20
Ciddi aort darlığı	20
Acil operasyon	10
Genel durum bozukluğu	5
Toplam skor	120

Ciddi Aort Stenozu neden önemli??



Miyokardiyal perfüzyonda bozulma



Miyokardiyal perfüzyonda bozulma

**Non-kardiyak cerrahide
mortalite ve morbiditede artış
% 10-31**

mortalite ve morbiditeler



Ani ölüm

Riskin belirlenmesi



European Heart Journal (2014) 35, 2372–2381
doi:10.1093/eurheartj/ehu044

CLINICAL RESEARCH

Valvular heart disease

Perioperative risk of major non-cardiac surgery in patients with severe aortic stenosis: a reappraisal in contemporary practice

Teruko Tashiro¹, Sorin V. Pislaru¹, Jodi M. Blustin¹, Vuyisile T. Nkomo¹, Martin D. Abel², Christopher G. Scott³, and Patricia A. Pellikka^{1*}

¹Division of Cardiovascular Diseases, Mayo Clinic, Rochester, MN, USA; ²Department of Anesthesiology, Mayo Clinic, Rochester, MN, USA; and ³Department of Health Sciences Research, Mayo Clinic, Rochester, MN, USA

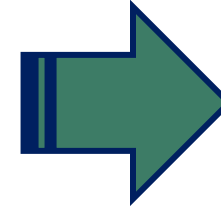
Received 19 July 2013; revised 3 January 2014; accepted 22 January 2014; online publish-ahead-of-print 19 February 2014

See page 2346 for the editorial comment on this article (doi:10.1093/eurheartj/ehu116)

Grup AS n= 256, semptomatik 106 hasta

Grup K n=256

Semptomatik AS; majör kardiyak olaylar ve ölüm↑



Preoperatif faktörler

- Semptomatik?
Asemptomatik?
- LVEF<%35, Grad.>40 mmHg
- Koroner arter hastalığı
- HT, KKY, DM, KBY
- PH ve eşlik eden MS

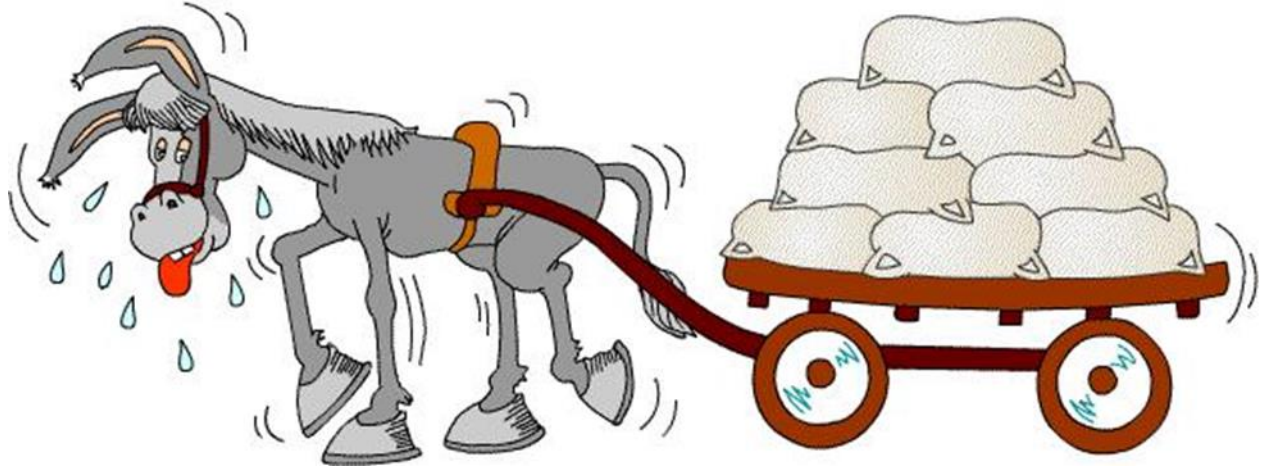
İntraoperatif faktörler

- Acil cerrahi
- Abdominal cerrahiler
- Ritim bozuklukları (AF, SVT)

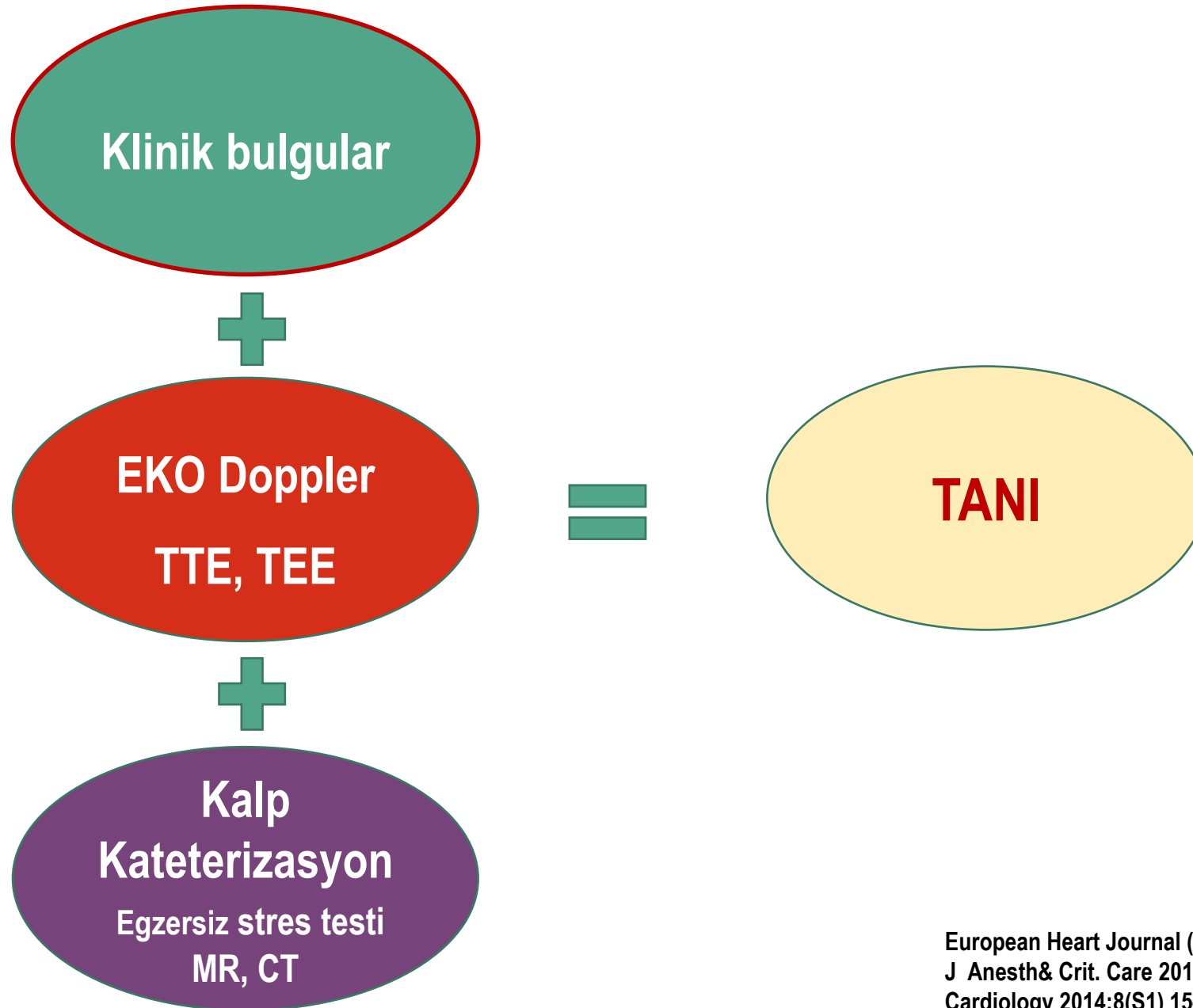
Aort Stenozu - Klinik Tanı

→ Bulgular

- Asemptomatik evre
- Semptomatik evre
 - ✓ Angina pectoris
 - ✓ Senkop
 - ✓ Kalp yetmezliđi
 - ✓ Ani ölüm (aritmi)



European Heart Journal (2021) 00, 1-72
J Anesth & Crit. Care 2018;10: 262-65.
Cardiology 2014;8(S1) 15-24



Bilinen Aort Stenozu tanısı yok ???

Hasta ile anestezi polikliniği şartlarında karşılaştığınızda ??



Anamnez

Öykü
Yandaş hst
Kullandığı ilaçlar

Laboratuvar

BNP ↑

EKG

LV hipertrofisi
AF, SVT

PA AC Grafi

Boot shape

Fizik Muayene

3-4. derece
sistolik murmur
(öz. KKY)

Bilinen Aort Stenozu tanısı yok ???

Hasta ile anestezi polikliniği şartlarında karşılaştığınızda ??

1

2

3

4

5

Anamnez

Öykü
Yandaş hst
Kullandığı ilaçlar

Laboratuvar

BNP ↑

EKG

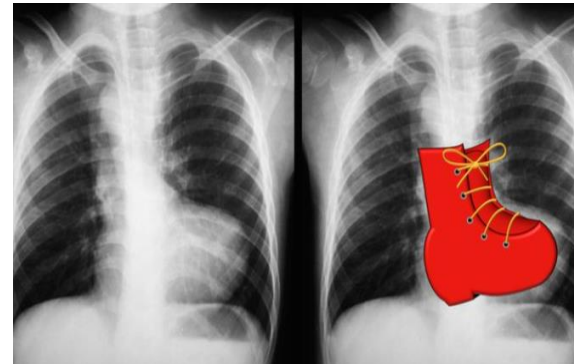
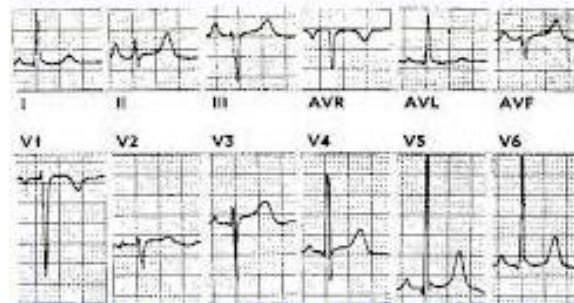
LV hipertrofisi
AF, SVT

PA AC Grafı

Boot shape

Fizik Muayene

3-4. derece
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(öz. KKY)



Bilinen Aort Stenozu tanısı yok ???

Hasta ile anestezi polikliniği şartlarında karşılaştığınızda ??

Preoperatif kardiyoloji konsültasyonu !!!

Anamnez

Öykü
Yandaş hst
Kullandığı ilaçlar

Laboratuvar

BNP ↑

EKG

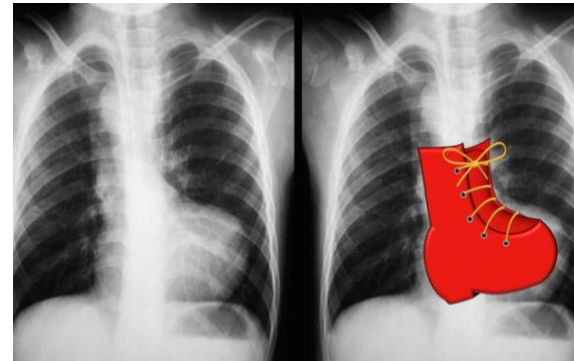
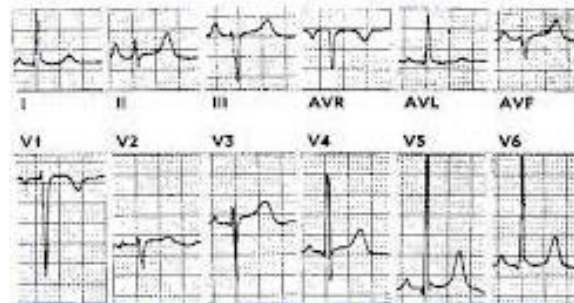
LV hipertrofisi
AF, SVT

PA AC Grafı

Boot shape

Fizik Muayene

3-4. derece
sistolik murmur
(öz. KKY)



Preoperatif cerrahi yaklaşım?

Acil cerrahi, elektif cerrahi



THEMATIC REVIEW ON PERIOPERATIVE MEDICINE

Mayo Clin Proc. 2020;95(4):807-822

Preoperative Evaluation Before Noncardiac Surgery



Dennis M. Bierle, MD; David Raslau, MD; Dennis W. Regan, MD;
Kama K. Sundsted, MD; and Karen F. Mauck, MD

Expert Opinion

Interventional Cardiology Review 2017;**12**(2):133–6.

Guidelines for the Management of Patients with Aortic Stenosis Undergoing Non-cardiac Surgery: Out of Date and Overly Prescriptive

Simon Kennon and Andrew Archbold

Barts Heart Centre, St Bartholomew's Hospital, London, UK

Preoperatif cerrahi yaklaşım?

Acil cerrahi, elektif cerrahi

Elektif NKC girişim kararlarında semptomlar önemli

Asemptomatik hastalar

- ✓ Düşük ve orta riskli elektif cerrahiler güvenli
- ✓ Anjina, senkop veya kalp yetmezliği → cerrahi ertelenmeli

Semptomatik hastalar

- ✓ Elektif cerrahi öncesi, kapak replasmanı düşünülmeli

Şiddetli aort stenozlu, komorbid hastalıkları olan yüksek riskli hastalar

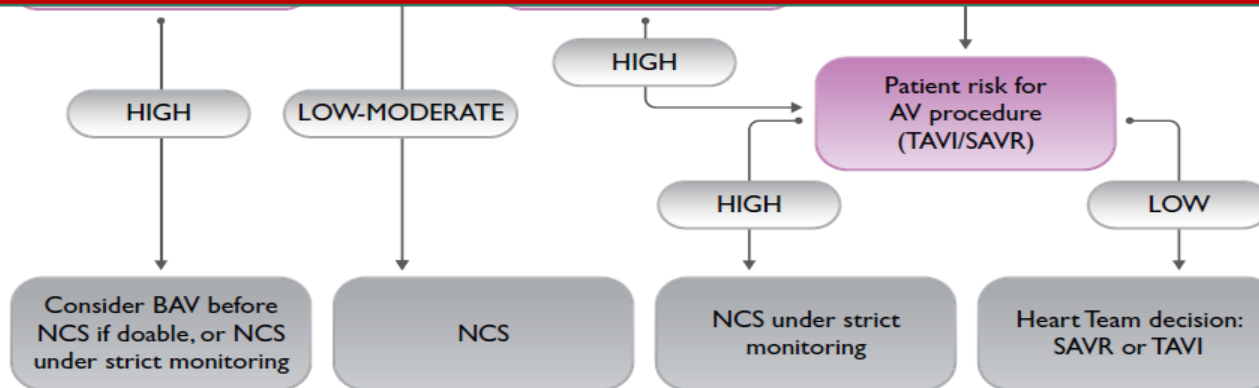
- ✓ TAVİ veya perkütan balon aortik valvüloplasti
- ✓ NKC daha sonra gerçekleştirilmeli

2021 ESC/EACTS Guidelines for the management of valvular heart disease

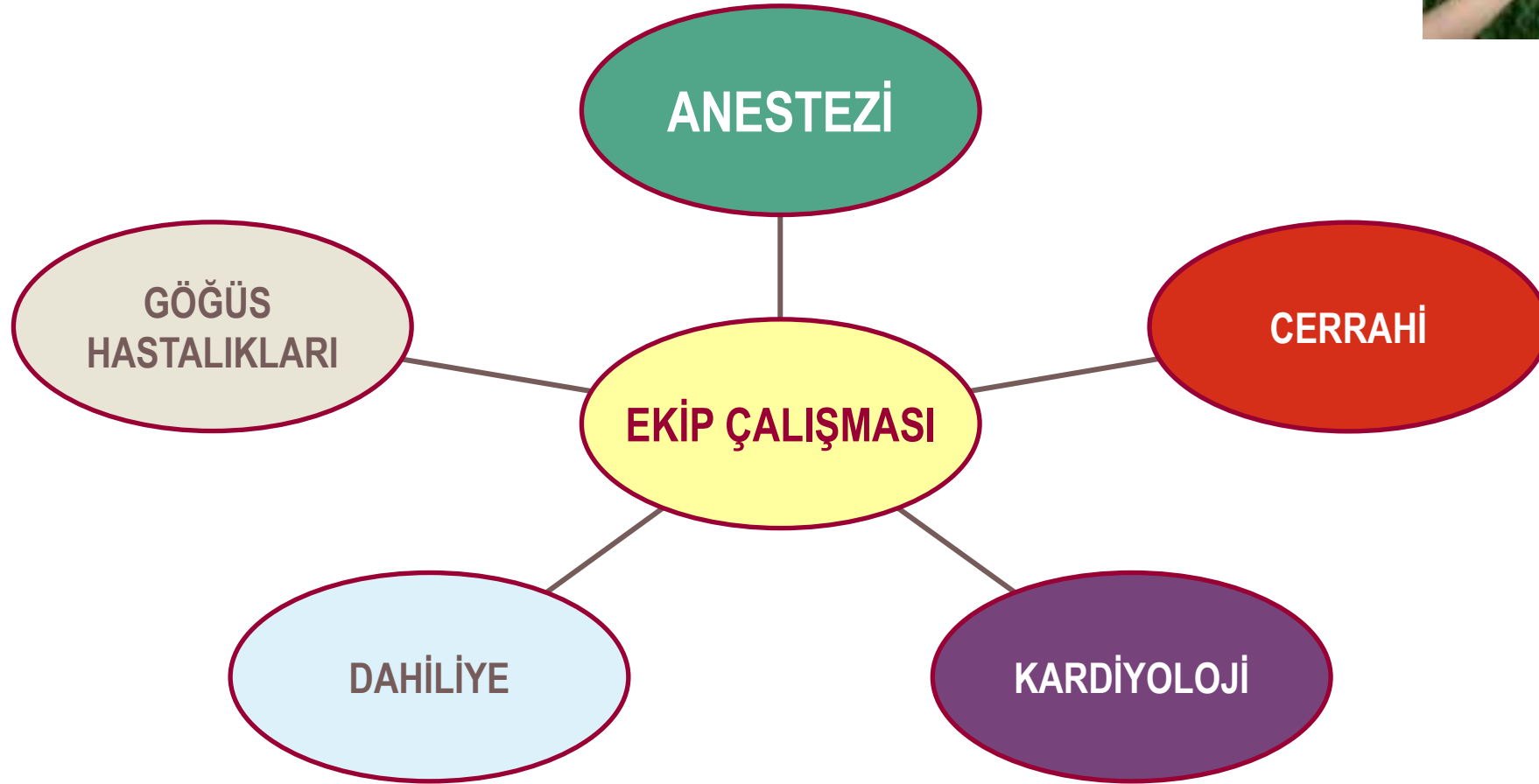
Management of non-cardiac surgery (NCS) in patients with severe aortic stenosis

Urgent or elective NCS

Bu işlemlerin yapılamadığı hastalarda cerrahi sadece hayati önem taşıyorsa düşünülmeli !!!



Yüksek kardiyak risk ve cerrahi





Perioperative Cardiac Risk Reduction in Noncardiac Surgery

- ✓ Medikal durumun optimizasyonu
- ✓ Uygun ilaç yönetimi
- ✓ Dikkatli monitörizasyon !!!

Abstr

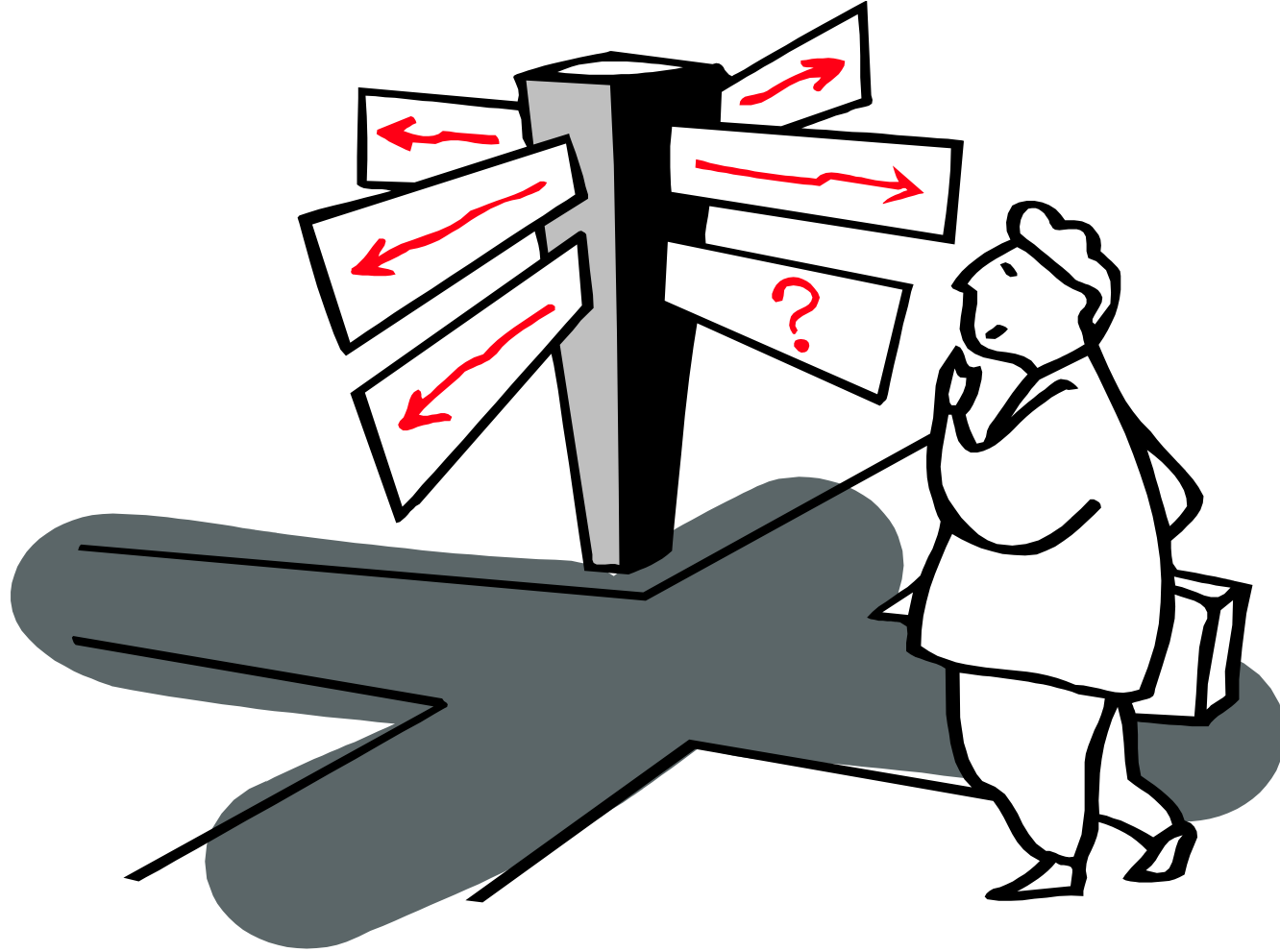
Major
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The major cardiovascular and anesthesiology societies in the United States, Europe, and Canada have published guidelines for perioperative management of patients undergoing noncardiac surgery. However, since publication of these guidelines, there has been a practice-changing evolution in the medical literature. In this review, we attempt to reconcile the recommendations made in these 3 comprehensive guidelines, while updating recommendations, based on new evidence, when available.

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D, MSc

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Anestezi yöntemimiz???



Kalp kapak hastalıkları

2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

Developed in Collaboration With the American College of Surgeons, American Society of Anesthesiologists, American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Anesthesiologists, and Society of Vascular Medicine

Endorsed by the Society of Hospital Medicine



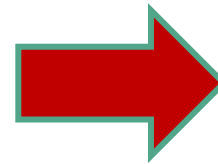
Canadian Journal of Cardiology 33 (2017) 17–32

Society Guidelines

Canadian Cardiovascular Society Guidelines on Perioperative Cardiac Risk Assessment and Management for Patients Who Undergo Noncardiac Surgery

Emmanuelle Duceppe, MD,^{a,b,c} Joel Parlow, MD, MSc (Co-chair),^d Paul MacDonald, MD,^e

- Değerlendirme;
 - ✓ Önyük
 - ✓ Ardyük
 - ✓ Miyokardın kontraktilesi
 - ✓ Kalp hızı ve ritmi



Kılavuz hedef
Anestezi yönetimi

Anestezi yönetimindeki hedefler



Önyük

Normal, yüksek

Ardyük

Normal

Hız

70-80/dk

Ritim

Sinüs

Kontraktilite

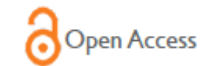
Normal

Anestetiklerin Aort Stenozu üzerine etkileri



Journal of Anesthesia & Critical Care: Open Access

Review Article



A review of aortic stenosis: an anesthetic perspective

Abstract

Anesthetists face many challenges in the operating room. Many patients have severe comorbidities that the anesthetic plan must be tailored to. In the United States, aortic stenosis (AS) is the most common valvular disorder.¹⁻⁴ AS affects nearly two to four percent of the population over the age of 65.⁵ Patients that are diagnosed with severe AS have a three year mortality of 75 percent unless the valve is replaced.³ Aortic stenosis is characterized by narrowing of the aortic valve (AV) causing a litany of symptoms. This review will discuss the anatomy and physiology, etiology, pathophysiology, and symptoms associated with AS. Additionally, anesthetic considerations for the care of a patient with AS will be reviewed.

Volume 10 Issue 6 - 2018

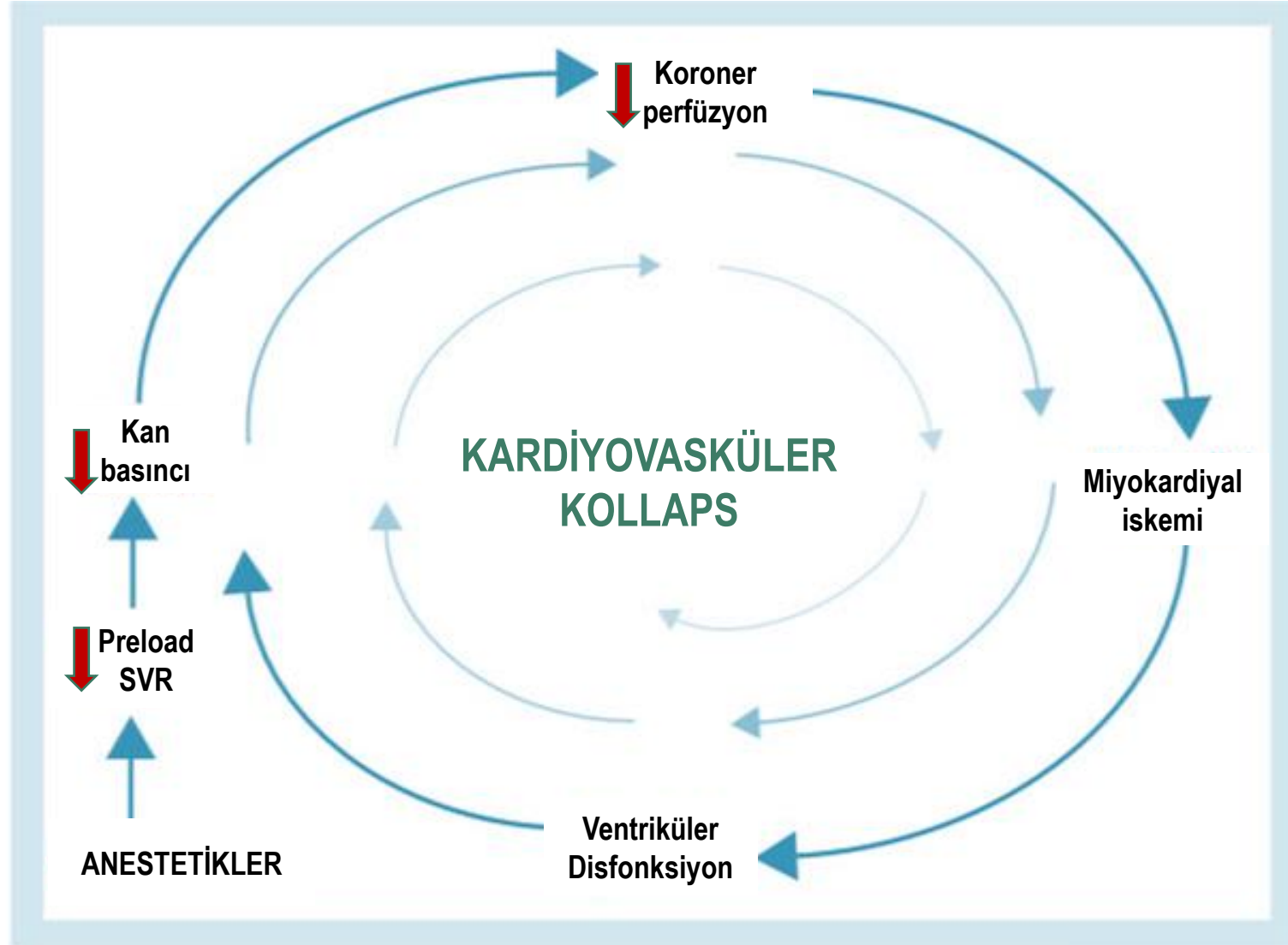
Adam C Schneider

Southern Illinois University Edwardsville, Paris Community Hospital, USA

Correspondence: Adam C Schneider, Southern Illinois University Edwardsville, Paris Community Hospital, USA, Email adschne@gmail.com

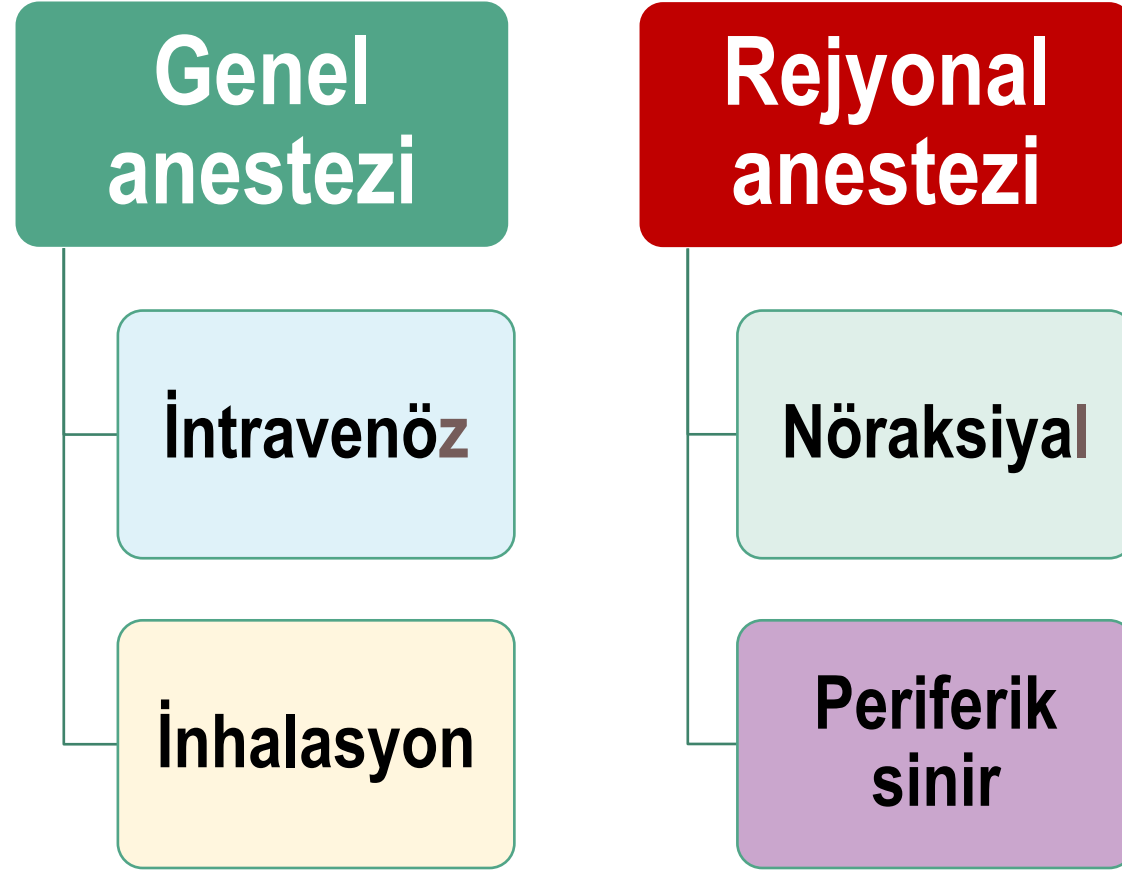
Received: November 08, 2017 | **Published:** December 21, 2018

Anestetiklerin Aort Stenozu üzerine etkileri



Aort Stenozu - Anestezi Uygulamaları

Kesin bir konsensus yok !! alıřmalar yetersiz, olgu sunumları mevcut



Aort Stenozu - Genel Anestezi

- ✓ Premedikasyonda benzodiazepinler
- ✓ Hipotansiyon, taşikardi/bradikardiden kaçınılmalı
- ✓ Semptomatik olgularda anestezi ajan seçimi kritik??

İntravenöz anestezi

- Anestezi indüksiyonu, titrasyon
- Narkotik anestezi tercih
- Benzodiazepin
- Etomidat
- Propofol
- Ketamin tek başına ⚠
- Kas gevşetici, histamin salınımı!!

Opioid

Volatil anestezi

- İdamede düşük konsantrasyon
- İzofluran, sevofluran
- Sinüs ritmini bozabilir
- Junctional ritim görülebilir
- Miyokardiyal depresyon
- Vazodilatasyon
- Atrial sistol kaybı

Propofol causes more hypotension than etomidate in patients with severe aortic stenosis: a double-blind, randomized study comparing propofol and etomidate

S. BENDEL, E. RUOKONEN, P. PÖLÖNEN and A. UUSARO
Department of Anaesthesia and Intensive Care, Kuopio University Hospital, Kuopio, Finland

Hindawi Publishing Corporation
Case Reports in Anesthesiology
Volume 2013, Article ID 852143, 3 pages
<http://dx.doi.org/10.1155/2013/852143>

Case Report

Mobitz Type II Atrioventricular Block Followed by Remifentanyl in a Patient with Severe Aortic Stenosis

Mehryar Taghavi Gilani and Majid Razavi

Int J Clin Exp Med 2015;8(7):11534-11538
www.ijcem.com /ISSN:1940-5901/IJCEM0009866

Original Article

Anesthetic management for craniotomy in a patient with massive cerebellar infarction and severe aortic stenosis: a case report

Ai-Jun Xu, Zhi-Gang He, Xiao-Hua Xia, Hong-Bing Xiang

- Hemodinamik stabilite – etomidat > propofol
- Opioidler – Remifentanil !!! AV blok etkisi
- Anestezi derinliği - taşikardi ve hipertansiyonu önlemeli, miyokard iskemisi !!
- Adrenerjik bloker ajan – kısa etkili **esmolol**
- Akut AF – verapamil veya kardiyoversiyon
- SVT/VT – amiadoron veya kardiyoversiyon
- Sık ventriküler ektopi – İV lidokain

Aort Stenozu - Rejyonel bloklar



Nöraksiyal bloklar

- Sempatik blokaj → hipotansiyon, bradikardi → miyokardiyal iskemi
- Ciddi olgular bradikardi ve hipotansiyona çok duyarlı !!!
- Hafif ve orta derece asemptomatik olgular, spinal veya epidural anesteziyi iyi tolere edebilir
- Bupivakain, ropivakain, levobupivakain + opioid, titrasyon

**Central regional anaesthesia in patients
with aortic stenosis – a systematic review**

Nöraksiyal bloklar				
	TEA	LEA	Spinal	Kombine SEA
Arteriyel vazodilatasyon	+	++	++++	++
Hipotansiyon	+	++	++++	++
Bradikardi	-	+	++	
Koroner kan akımı	Artar/azalır	Azalır	Azalır	Azalır
Miyokardın O₂ ihtiyacı	Azalır	-	Artar	-
Segmental duvar hareketleri	Bozulmaz	Bozular	Bozular	Bozular
İskemik LV duvar hareket bozukluğu	Düzelir	-	Bozular	-/hafif bozular

Dan Med J 64/9 September 2017

Central regional anaesthesia in patients with aortic stenosis – a systematic review

Sofia Johansson & Morten Nikolaj Lind

Indian J Anaesth. 2017 May; 61(5): 441–442.

Regional anaesthesia in a patient with aortic stenosis for bladder tumour resection

Aalekh Prasad, Abhik Ghosh, and Tulsi Nag

Korean J Anesthesiol 2014 August 67(2): 129-132.

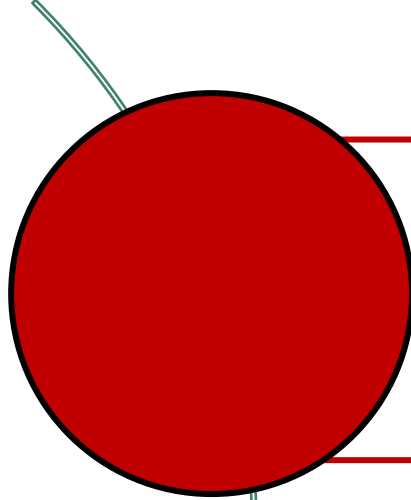
Combined spinal-epidural anesthesia for lumbar discectomy in a patient with asymptomatic severe aortic stenosis-a case report-

Young Sung Kim, Ji Hye Park, Shin Young Lee, Byung Gun Lim, Heezoo Kim



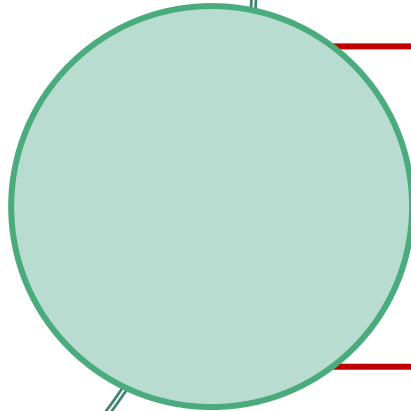
- Ciddi AS, nöraksiyal anestezi??? Volüm replasmanı çok önemli
- Hafif hipotansiyon → miyokardiyal O₂ gereksinim-sunum dengesinde bozulma
- Epidural anestezi → yavaş hipotansiyon, spinal anesteziye tercih
- KSEA uygulamaları, tek başına spinale göre daha güvenli
- **Hipotansiyon** tedavisi – 25-50 mg gibi düşük doz **fenilefrin**

Ciddi AS - Genel anestezi? Nöraksiyal bloklar?



Genel anestezi

- Hemodinamik stabilitenin sürdürülmesinde zorluk
- Endotrakeal entübasyonda taşikardi, hipertansiyon
- İnhalasyon anesteziklerine bağlı miyokard depresyonu
- Kan basıncı ve kalp debisinde azalma



Med J Armed Forces India. 2016 Dec; 72(Suppl 1): S111–S114.

Successful use of unilateral spinal block after failed epidural block in a patient with severe aortic stenosis

Naresh Dhawan, Col,^{a,*} Vipul K. Sharma, Brig,^b and Rajeev Nair, Col^c

Sürekli spinal anestezi

Rev Bras Anesthesiol. 2016;66(1):82-85



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Official Publication of the Brazilian Society of Anesthesiology
www.sba.com.br



CLINICAL INFORMATION

Continuous spinal anaesthesia with minimally invasive haemodynamic monitoring for surgical hip repair in two patients with severe aortic stenosis[☆]

María Mercedes López^a, Emilia Guasch^a, Renato Schiraldi^a, Genaro Maggi^{a,*},
Eduardo Alonso^a, Fernando Gilsanz^{a,b}

Sürekli spinal anestezi

Türk Tıp Dergisi 2016; 8: 1-7.

ORİJİNAL ARAŞTIRMA

ORIGINAL RESEARCH

KARDİYAK AÇIDAN YÜKSEK RİSKLİ 17 HASTADA
KONTİNYU SPİNAL ANESTEZİ DENEYİMLERİMİZ

Kalça protezi	1.ve 2. Hastalar: <u>Orta aort darlığı</u> (kapak alanları sırasıyla: 1.1 ve 1.2 cm ²), 3. ve 4. Hastalar: Ağır KOAH ve sağ kalp yetmezliği (sırasıyla FEV1'leri % 35 ve % 40), 5. ve 6. Hastalar: Geçirilmiş koroner arter bypass hikayesi var ve EF'leri sırasıyla %30 ve %35
Fermur fraktürü	1.Hasta: 100 yaşında, 2. Hasta: <u>İleri aort darlığı</u> (kapak alanı 0.7 cm ²), 3.Hasta: orta mitral yetmezliği (kapak alanı 1.2 cm ²)

Aort Stenozu - Periferik Bloklar

Indian J Clin Anaesth 2021;8(1):133-136

Sciatico femoral block in patient with aortic stenosis

Shilpa Amol Acharya¹, Tejaswini Lalasaheb Phalke^{1,*}, Noopur Singh¹

JA Clin Rep. 2017 Dec; 3: 53.

Successful use of femoral nerve block with dexmedetomidine for fracture fixation of an intracapsular fracture of the femoral neck in a patient with severe aortic stenosis: a case report

Yui Yamane, Takeishi Omae, corresponding author Keito Kou, and Sonoko Sakuraba

Can J Anesth/J Can Anesth (2015) 62:665–666

Ultrasound-guided peripheral nerve blocks for total knee arthroplasty in the context of severe aortic stenosis: avoiding the general anesthetic

Mauricio Forero, Richelle Kruisselbrink, Silvia Juliana Leon

Anesth Pain Med. 2014 May; 4(2): e13713.

Anesthetic Management for Lower Limb Fracture in Severe Aortic Valve Stenosis and Fat Embolism: A Case Report and Review of Literature

Faranak Rokhtabnak¹, Mohammad Mahdi Zamani¹, Alireza Kholdebarin¹, Alireza Pournajafian¹ and Mohammad Reza Ghodraty¹.

The Int J Anesth. 2008 Volume 19 Number 2.

Severe Aortic Stenosis: Combined Lumbar Plexus, Sciatic and Iliohypogastric Nerve Block with 0.25% Levobupivacaine for Reduction of Hip Fracture

H Eker, A Kocum, T Kocum, A Turkoz, G Arslan

Aort Stenozu - Periferik Bloklar

1st Pan Asian NYSORA Symposium on Regional Anaesthesia and Pain Medicine: Program and Abstract Book, p104-105
February 2007

Peripheral nerve blocks for joint arthroplasty in severe aortic stenosis

Alifia Tameem

Regional Anaes

Shoulder re

brachial plex

w.Thomas

- ✓ Uygun cerrahi koşullar
- ✓ Hemodinami stabil
- ✓ İnotrop ihtiyacı az
- ✓ Perioperatif yan etki yok
- ✓ Postoperatif analjezi

Tercih edilebilir

erscalene

Front. Oncol. June 2021 | Vol.

Ultrasound-Guided Regional Anesthesia for Mastectomy in an SAS Patient:

A Case Report

Na Zhang†, Tingting Wang†, Penghui Wei, Jinfeng Zhou* and Jianjun Li*

Aort Stenozu - Gebe Hasta

Chen et al. *BMC Anesthesiology* (2019) 19:116
<https://doi.org/10.1186/s12871-019-0791-x>

BMC Anesthesiology

CASE REPORT

Open Access

Aortocaval compression resulting in sudden loss of consciousness and severe bradycardia and hypotension during cesarean section in a patient with subvalvular aortic stenosis

Shouming Chen^{1,2}, Lan Wu^{1,2} and Xiaoqin Jiang^{1,2*}



Unusual management of parturient patient with severe bicuspid aortic valve stenosis and congestive heart failure

Mahdi Kahrom⁽¹⁾, Mostafa Ahmadi⁽²⁾, Behrooz Mottahedi⁽¹⁾, Masoomeh Tabari⁽³⁾, Atieh Vatanchi⁽⁴⁾, Naser Paravi⁽³⁾, Hamid Ghaderi⁽⁵⁾

Case Report

Abstract

BACKGROUND: Critical aortic stenosis (AS) is an unusual cardiac pathology in pregnancy, but has significant impact on the fetal and maternal outcomes of pregnancy. Pregnant patients with aortic stenosis and heart failure represent a major challenge for the heart team and anesthesiologist who should balance the risks and benefits of different treatment strategies and their effects on the mother and fetus.

CASE REPORT: We present a 26-year-old parturient who underwent cesarean section at 30 weeks of gestation under general anesthesia in the presence of cardiac surgical team followed by delayed aortic valve replacement after two weeks.

This case report describes the importance of multidisciplinary preoperative medical and anesthetic planning to avoid the deterioration of cardiac function in such patients.

KEYWORDS: Aortic Stenosis (AS), Bicuspid Aortic Valve (BAV), Aortic Valve Replacement (AVR), Congestive Heart Failure (CHF)

Date of acceptance: 07 Nov. 2017

Spinal anestezi kaçın
Epidural anestezi !!
Genel anestezi 😊

Driul et al. *Cardiovascular Ultrasound* (2020) 18:43
<https://doi.org/10.1186/s12947-020-00226-x>

CASE REPORT

Open Access

Vaginal delivery in a patient with severe aortic stenosis under epidural analgesia, a case report

Lorenza Driul^{1,2}, Francesco Meroi^{3,4*}, Alessia Sala^{1,2}, Silvia Delrio^{3,4}, Daisy Pavoni⁵, Federico Barbariol⁴, Ambrogio Londero², Teresa Dogareschi⁴, Alessandra Spasiano⁴, Luigi Vetrugno^{3,4†} and Tiziana Bove^{3,4†}



Case Report

A Multidisciplinary Approach to Anesthetic Management of a Parturient with Severe Aortic Stenosis

Kalpna Tyagaraj,¹ David A. Gutman,¹ Lynn Belliveau,¹ Adnan Sadiq,² Alok Bhutada,³ and Dennis E. Feerman¹

Hemodinamik monitörizasyon - Parametreler

Cardiac Evaluation and Monitoring of Patients Undergoing Noncardiac Surgery

Arsalan Rafiq^{1,2}, Eduard Sklyar^{1,2} and Jonathan N Bella^{1,2}

¹Division of Cardiology, Department of Medicine, Bronx-Lebanon Hospital Center, Bronx, NY, USA. ²Internal medicine, Icahn School of Medicine at Mount Sinai, New York, NY, USA.

Health Services Insights

1-17

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DOI: 10.1177/1178632916686074



- **Rutin monitörizasyon (EKG, SpO₂, ETCO₂)**
- **Arteriyel basınç mutlaka !!!**
- **Santral venöz basınç (SVP)**
- Kardiyak debi (CO)
- Sistemik vasküler rezistans (SVR)
- **Pulmoner kapiller wedge basıncı (PCWP)**
- Pulmoner vasküler permeabilite indeksi (PVPI)
- **Eksternal defibrilasyon pedleri**

SIVI TEDAVİSİ

- ✓ Strok volüm varyasyonu
- ✓ Global end-diastolik volüm
- ✓ Ekstravasküler lung water

Hangi hemodinamik monitörizasyon???

USG teknikleri

(TTE, TEE, Dopp. USG,
USG KD monitörü,
Özofageal EKO dopp,
Transtrakeal dopp.)

Pulmoner arter
kateteri (PAK)

PiCCO

İnvaziv mi??

Kalibre edilmeyen
Puls kontür analizi

(FloTrac, MostCare)

Noninvaziv teknikler

Volum klemp cihazı
Applanasyon Tonometri
Bioreaktans
Estimated continuous CO
BIS

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AMERICAN HEART ASSOCIATION, INC.
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CLINICAL PRACTICE GUIDELINE: FULL TEXT

2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease



A Report of the American College of Cardiology/American Heart Association Joint Committee on
Clinical Practice Guidelines



ESC

European Society
of Cardiology

European Heart Journal (2021) 00, 1–72
doi:10.1093/eurheartj/ehab395

ESC/EACTS GUIDELINES

2021 ESC/EACTS Guidelines for the management of valvular heart disease

Rutin EKG, arter ve SVP monitörizasyonu önerilmekte

- İnvaziv monitörizasyon tercih, minimal, non-invaziv?
- TTE ve TEE ilk sırada düşünölmeli
- Transpulmoner termodilüsyon
- PH var ise PAK düşün!!

Sıvı replasman tedavisi - Ne verelim?

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doi: 10.1111/aas.12328

Dynamic variables and fluid responsiveness in patients for aortic stenosis surgery

L. Ø. HØISETH^{1,2}, I. E. HOFF^{2,3}, O. A. HAGEN², S. A. LANDSVERK² and K. A. KIRKEBØEN^{1,2}

Hedef intravasküler volümü korumak, ön yükü artırmak

- SVP yetersiz, intraoperatif TEE ile değerlendirilmeli !!
- Kristaloid (RL, dengeli, SF), sentetik kolloidler
- Akut kan kaybı hemen karşılanmalı
- Htc < %25 ise ES transfüzyonu düşün!! (Kanıt 1D)

Farmakolojik tedavi

Farmakolojik ajan	HR	PAOB	CO	SVR	MAP	MVO ₂
İnotropik ajanlar						
Dobutamin	↑↑	↓	↑	↓	↑	↑↔
Miks vazoaktif ajanlar						
Norepinefrin	↑↑	↑↑	↑	↑↑	↑↑	↑
Epinefrin	↑↑	↑↓	↑	↑	↑	↑
Dopamin	↑↑	↑↓	↑	↑↓	↑↓	↑
Vazopressör ajanlar						
Fenilefrin	↔	↑	↔	↑↑	↑↑	↑↔
Vazopressin	↔	↔	↔	↑↑	↑↑	↑↔
Vazodilatör ajanlar						
Nitrogliserin	↑	↓↔	↔	↓	↓	↓↔
Nitroprussid	↑↑	↓↔	↔	↓↓	↓↓	↓↔

Tartışmalı konular ??

β -bloker kullanımı, esmolol tercih

Statin kullanımı, postop AF

Kalsiyum kanal blokeri kullanımı, SVT

Diüretik kullanımı, sıvı-elektrolit bozukluğu!!!

ACE kullanımı?

İnfektif endokardit profilaksisi? Dental girişim

Son Söz



- NKC morbidite ve mortalitesi yüksek bir tablo
- Hemodinamik stabilitenin korunması çok önemli
- Preoperatif deęerlendirmede riskli hasta belirlenmeli
- Hastanın klinik durumuna göre anestezi planı yapılmalı
- İntraoperatif ve postoperatif ileri monitorizasyon uygulanmalı
- Postoperatif etkin ağrı kontrolü yapılmalı



TEŞEKKÜRLER