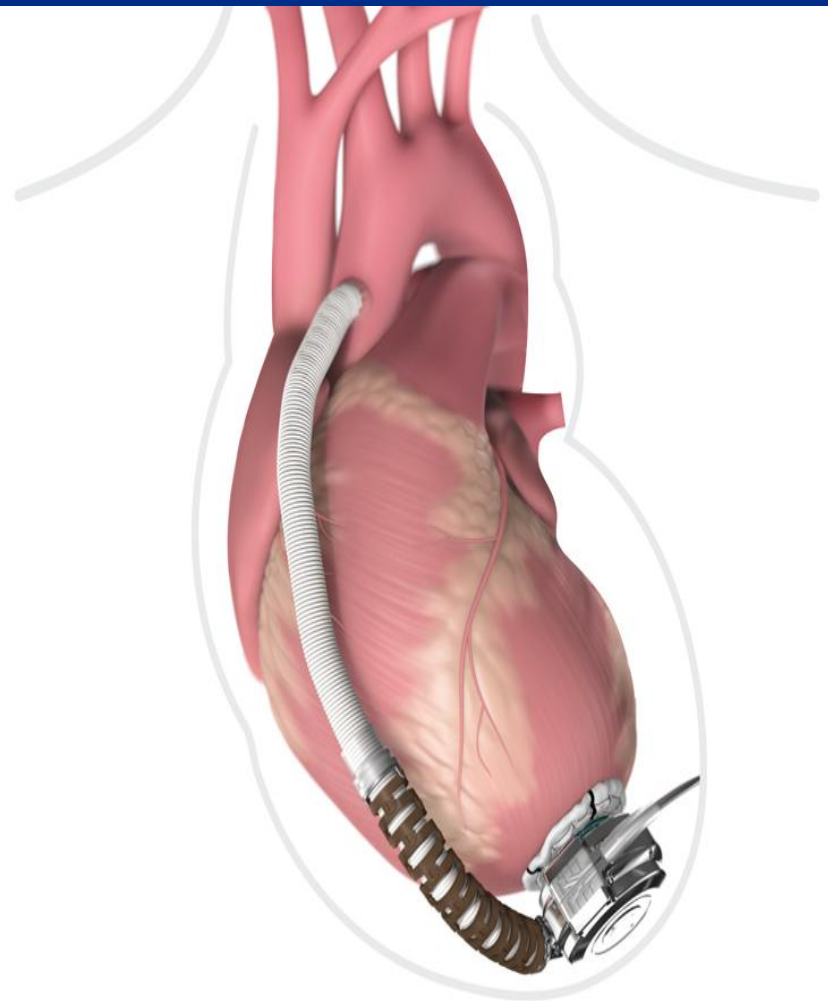
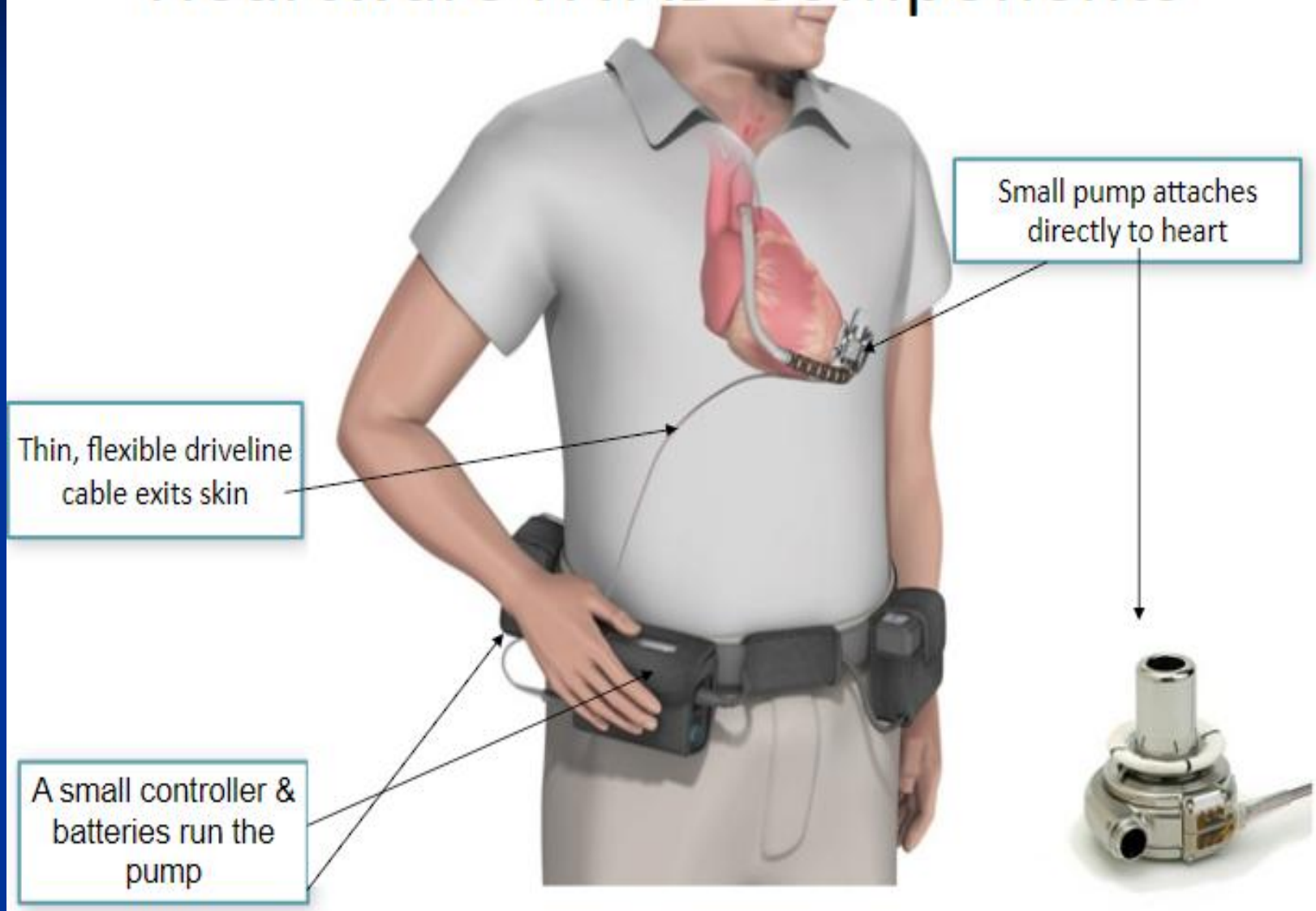
NAJČASTĚJŠIE KOMPLIKÁCIE U PACIENTOV S DLHODOBOU MECHANICKOU SRDCOVOU PODPOROU HVAD.

Šebo M.[1], Horváth V.[1], Bedáňová H.[1],
Němec P.[1], Veteškova L.[1], Tomášek A.[1],
Janíčková O.[1], Pařenicová I., CKTCH Brno

Heartware HVAD



Heartware HVAD Components



Medical Devices

Recently-Approved Devices

2018 Device Approvals

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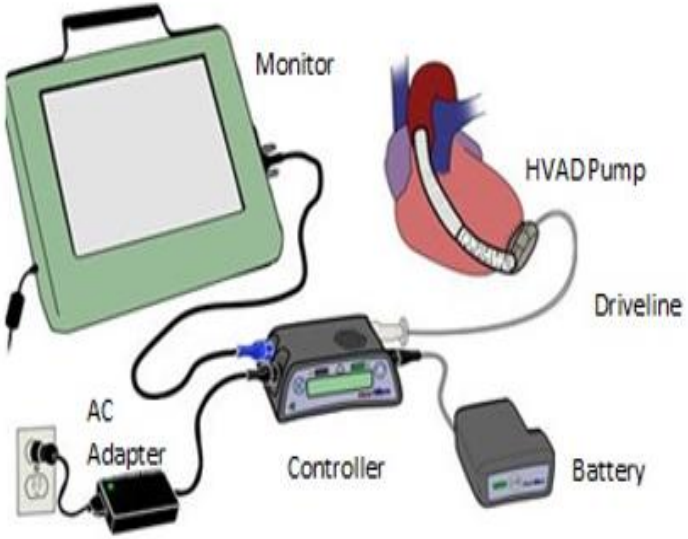
HeartWare™ HVAD™ - P100047/S090



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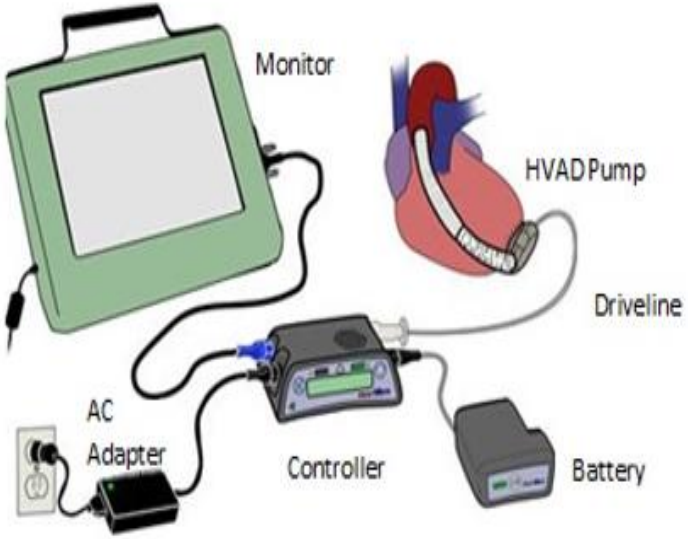

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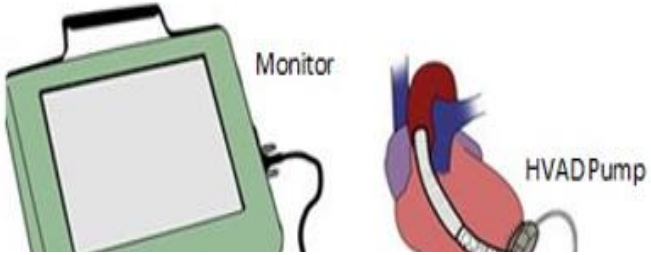
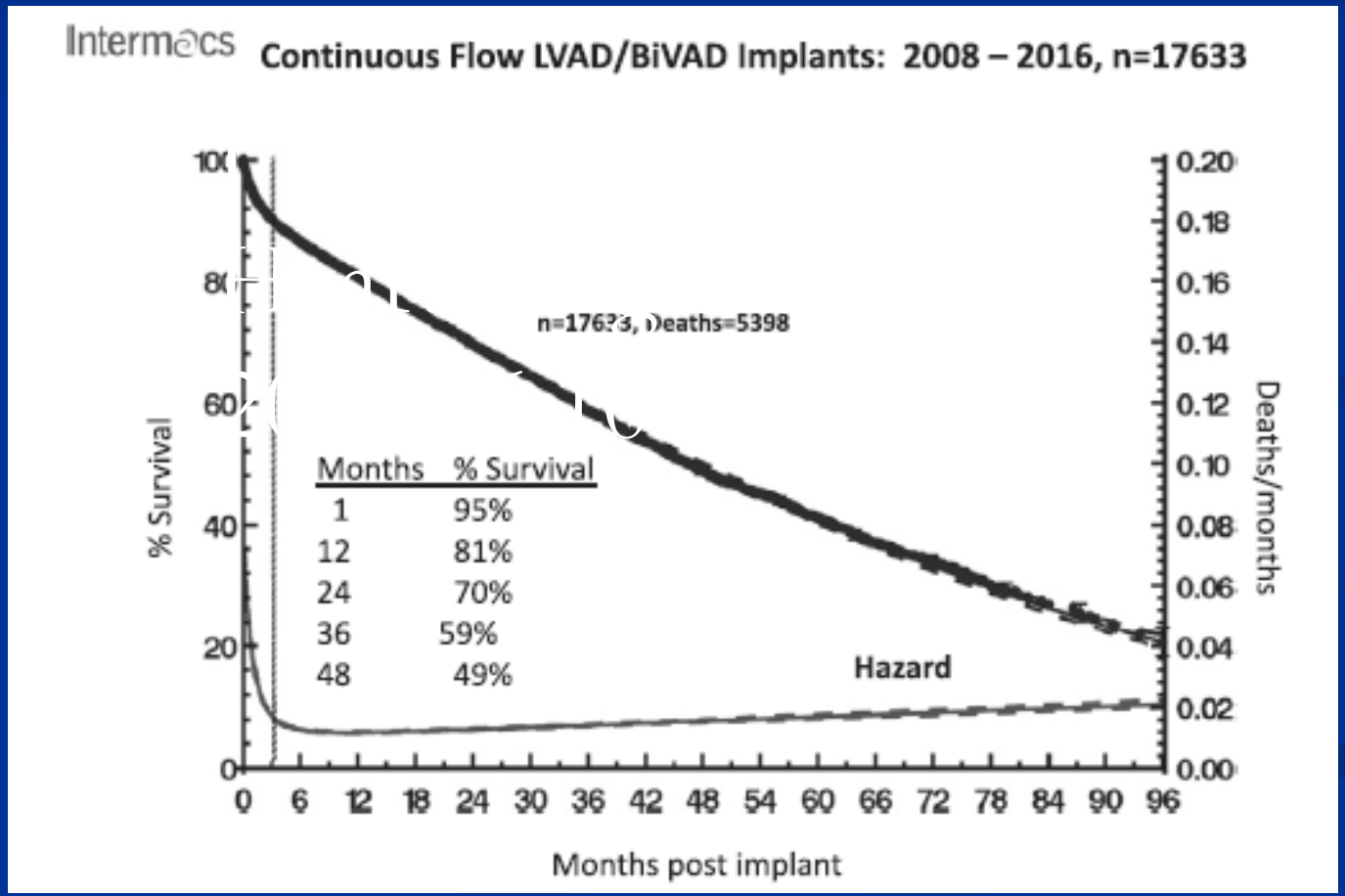


When is it used? The HeartWare™ HVAD™ System is designed for use both in and out of hospital settings, including during patient transport and is used when a heart failure patient's weakened heart is not capable of pumping sufficient blood to the rest of the body. The system is used as a destination therapy in patients who are not cardiac transplant candidates but are also at risk of death from end-stage heart failure that is unmanageable by standard medical therapy.

2017 INTERMACS REPORT

Eighth annual INTERMACS report: Special focus on framing the impact of adverse events



J HeartLungTransplant2017;36:1080–1086

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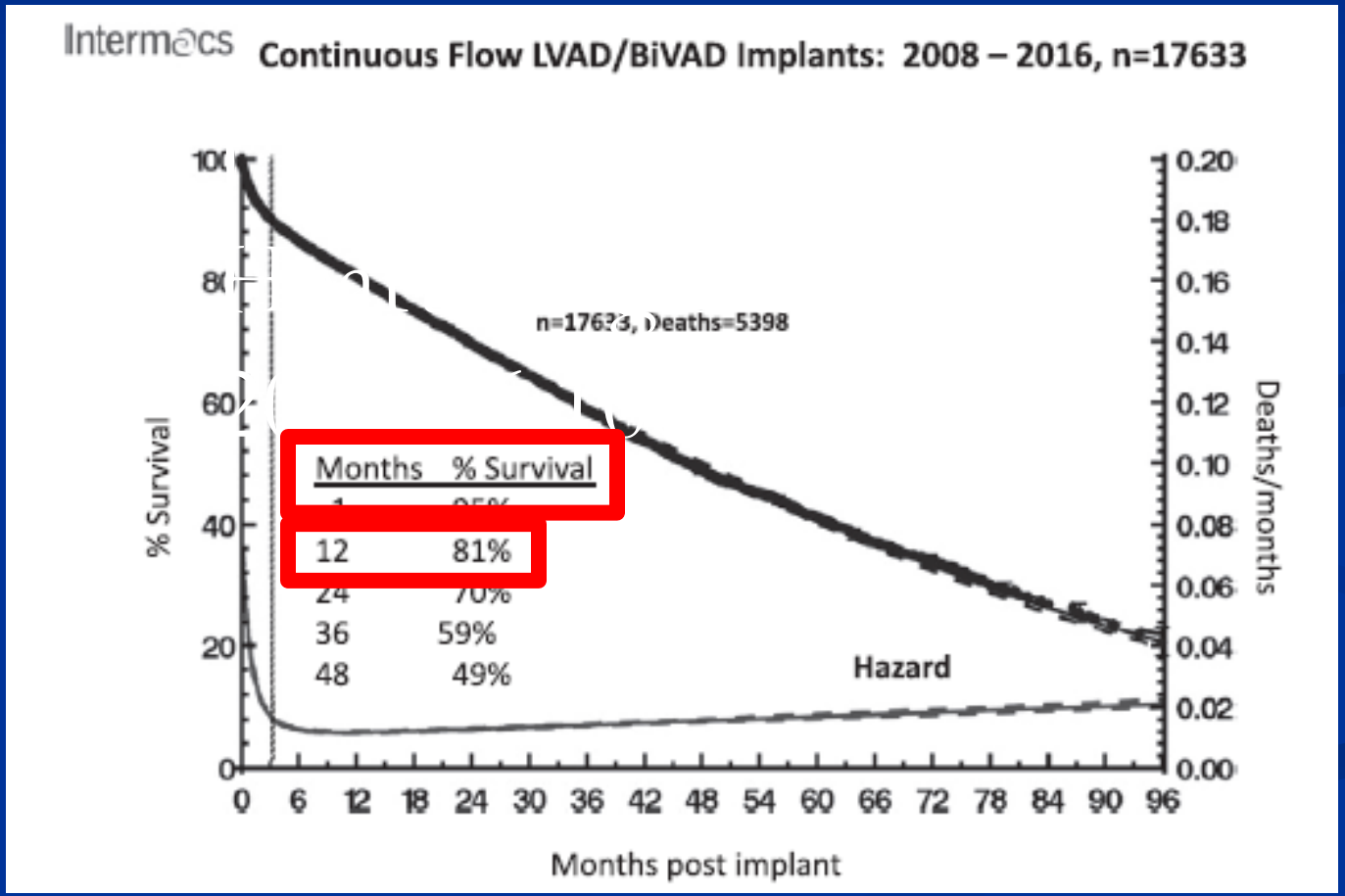


J HeartLungTransplant2017;36:1080–1086

Najčastejšie komplikácie LVAD

- CMP
- Trombózy čerpadla
- Krvácanie
- MOF
- Pravostranné zlyhanie
- Infekcie

Najčastejšie komplikácie LVAD

- CMP
- Trombózy čerpadla
- Krvácanie
- MOF
- Pravostranné zlyhanie
- Infekcie

- *LVAD-related complications can occur in up to 60% of patients by six months post-implantation, and, by two years, 80% of patients experience at least one adverse event*

Kirklin JK, Naftel DC, Pagani FD, Kormos RL, Stevenson LW, Blume ED, Myers SL, Miller MA, Baldwin JT, Young JB. Seventh INTERMACS annual report: 15,000 patients and counting. J Heart Lung Transplant. 2015 Dec;34(12):1495-504.

Cieľ

- Zhodnotenie výskytu včasných i neskorých komplikácií u pacientov po implantácií centrifugálnej dlhodobej mechanickej srdcovej podpory HeartWare™ HVAD™

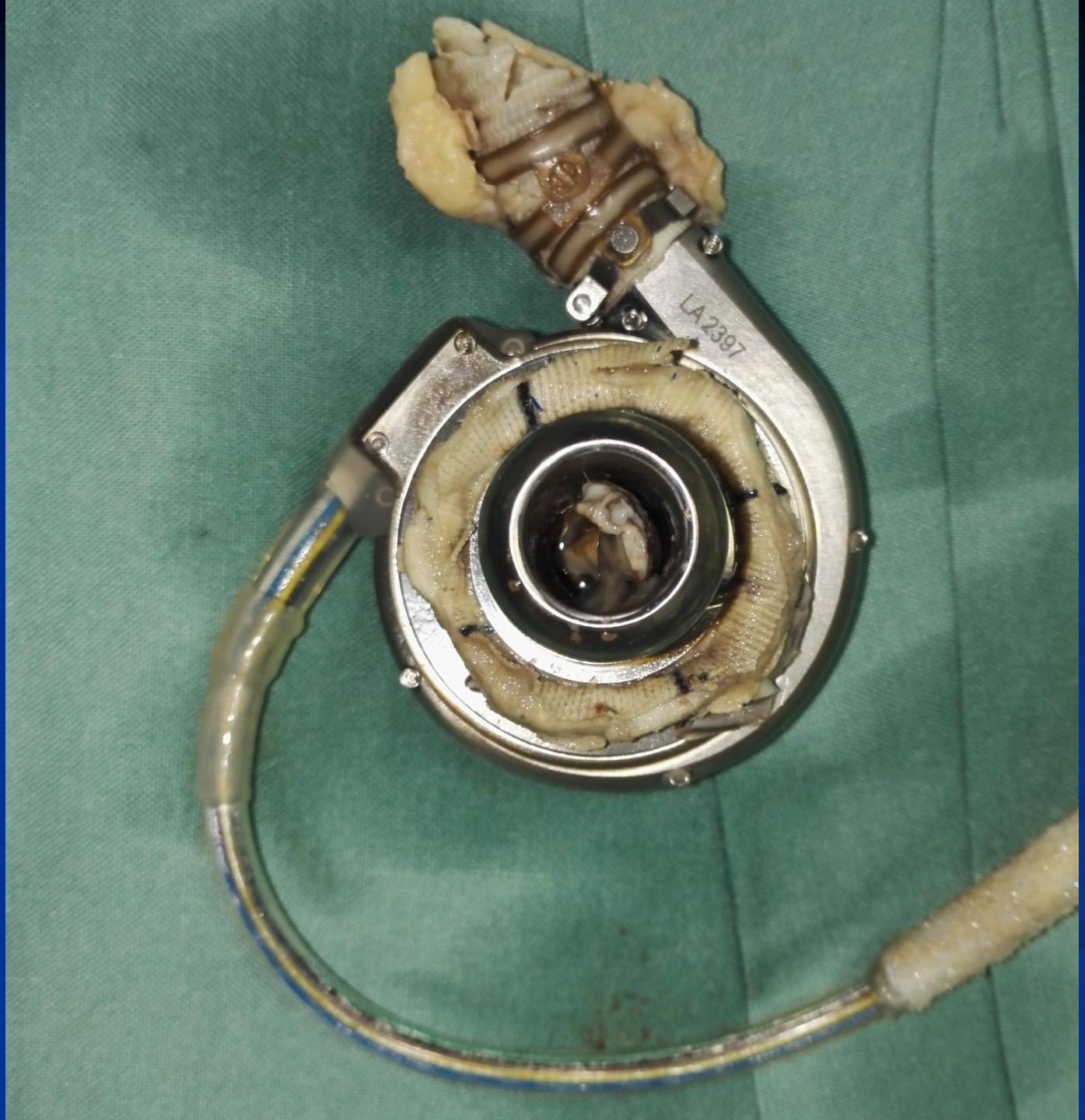
Súbor

- 53 pacientov po implantácií HVAD v období 2013-2017
- Priemerný vek 55 rokov
- 53% pacientov predoperačne na inotropnej podpore
- 70% pacientov bola podpora implantovaná mininvazivne

Výsledky I - mortalita

- Hospitalizačná mortalita 13% (7 pac. z 53)
- **1-ročná mortalita 19%** (8 pac. zo 42).
  - 3x intracerebr. Krvácanie (z toho 1x do Tu)
  - 2x trombóza pumpy/iCMP
  - 2x septické komplikácie
  - 1x MOF

- † na katecholamínovej podpore - 33%
- † bez KA podpory 9% ($p < 0.03$).

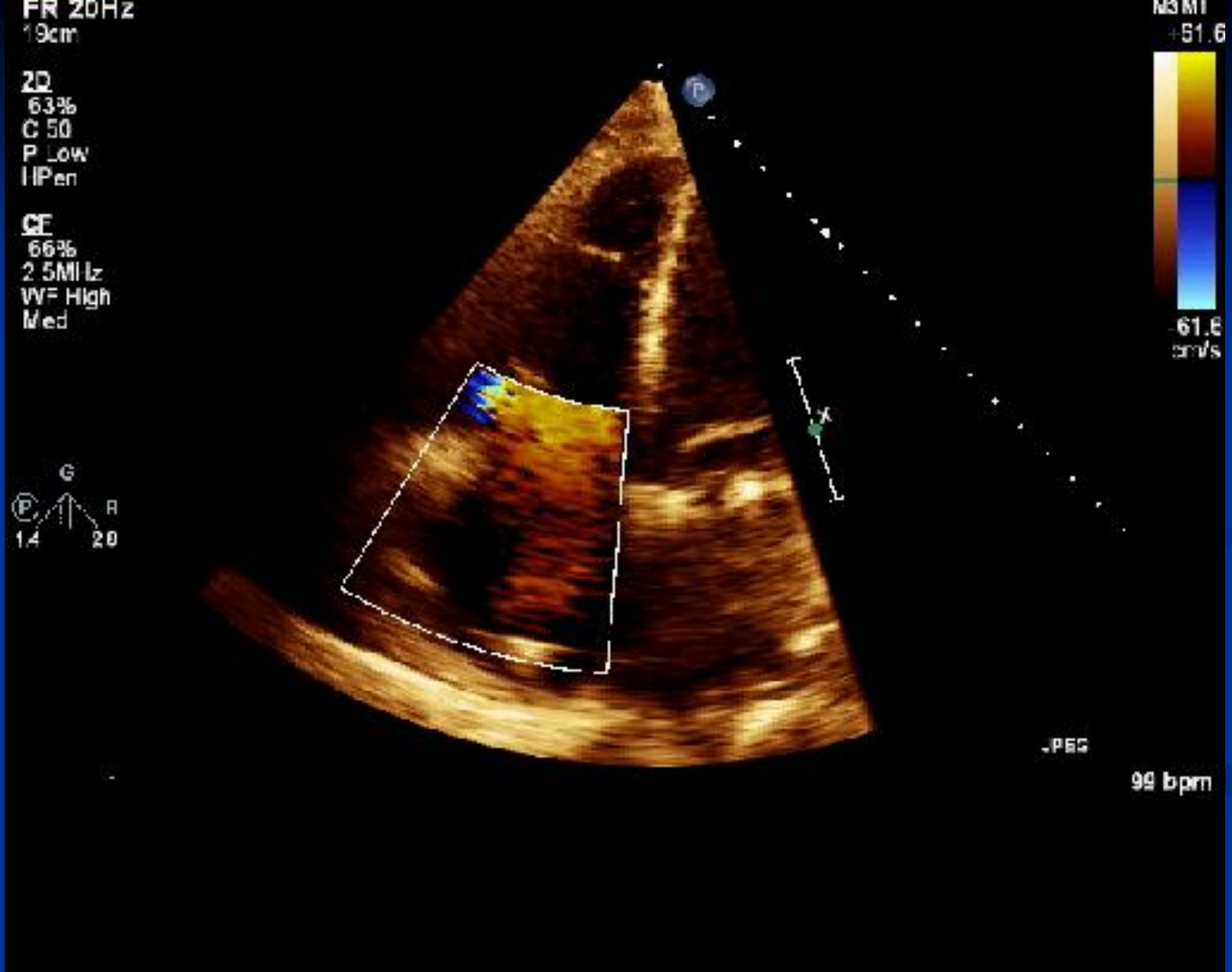

LA2397

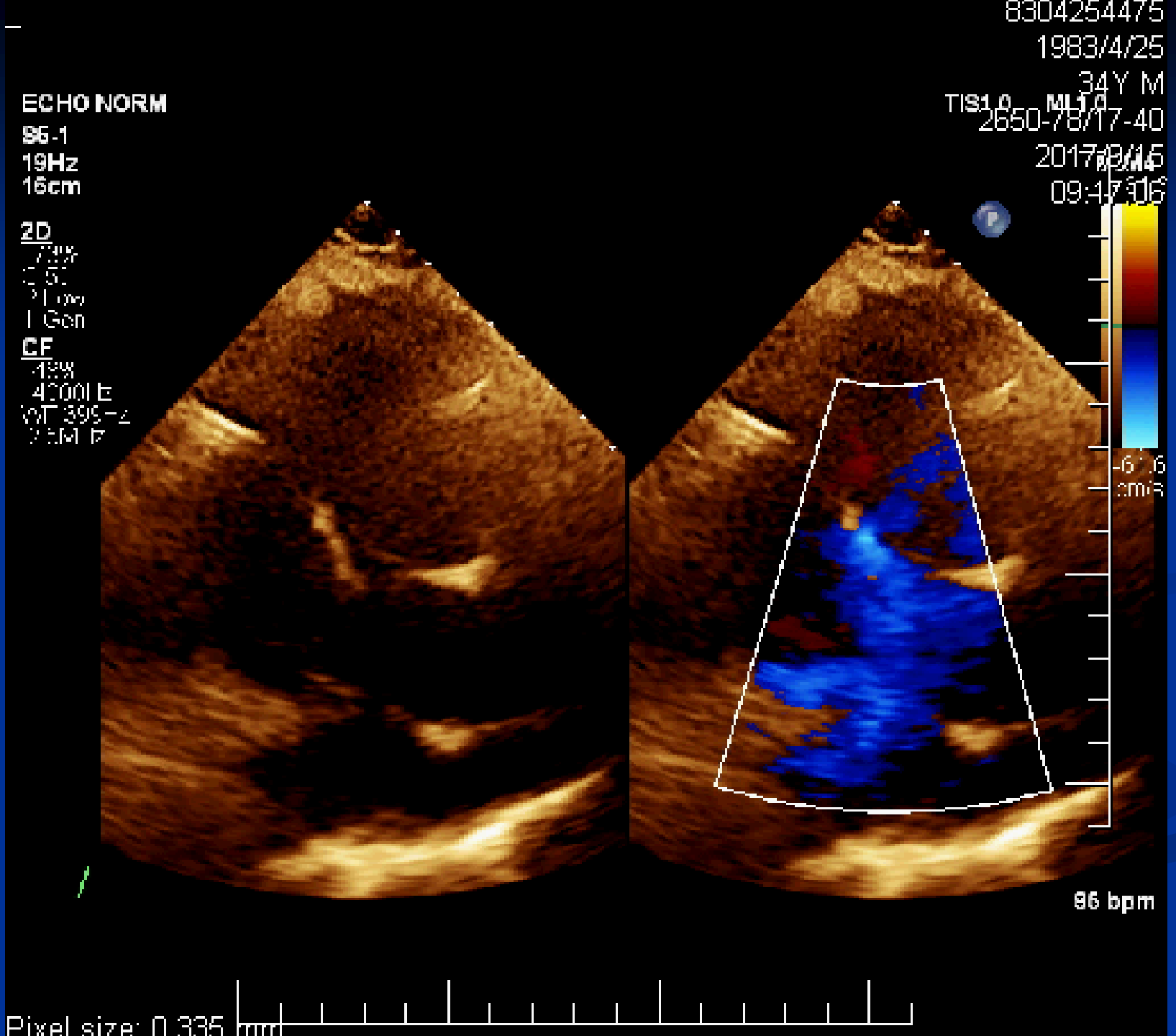
Výsledky II – včasné komplikácie

- včasná revízia pre krvácanie - 28% pacientů
- ARI s nutnostou prechodnej RRT - 38%
- Dočasná pravostranná podpora – 11%
- výmena HW pre trombózu – 2%
- Iné krvácanie - GIT - 7%, epistaxis - 4% močových cest (4%)

Výsledky III – pozdné komplikácie

- Infekcia okolia káblu – 35% prepustených
  - Z toho 44% vyžadovalo chir. Revíziu
- Pravostranná dekompenzácia - rehospitalizovaných 22%
- Trombóza pumpy – 7%, riešené systémovou TL


FR 26Hz
19cm
2D
63%
C 50
P Low
HPen
CE
66%
2.5MHz
WF High
Med
+51.6
-61.6
cm/s
99 bpm


8304254475
1983/4/25
34Y M
2650-78/17-40
ECHO NORM
96-1
19Hz
16cm
2D
CF
96 bpm
Pixel size: 0.335 mm

HeartWare Autologs

PATIENT INFORMATION

Patient ID: 8304254475

Pump ID: HW27492

Controller ID: CON310307

Data through: January 08, 2018

CURRENT VAD PARAMETERS

SPEED (RPM): 2500

FLOW (LPM): 4.3

POWER (W): 3.6

VAD PARAMETER TRENDS

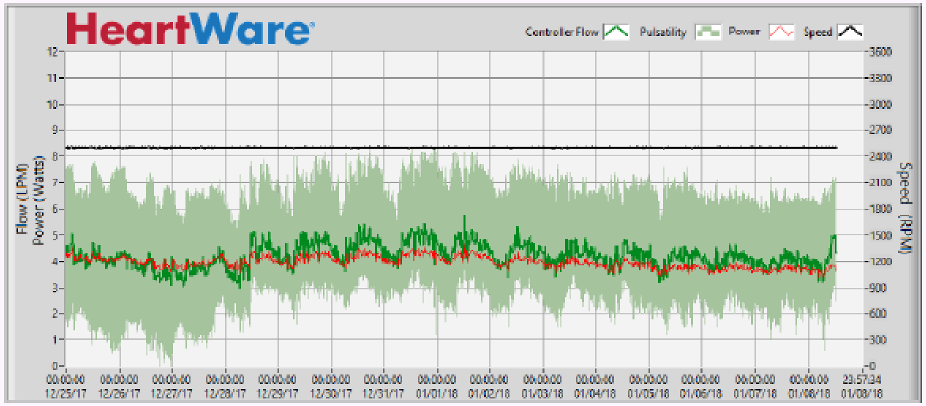


Figure 1: VAD parameters and flow pulsatility over the last 14 days.

ADDITIONAL NOTES

-No alarms have been logged in the last 14 days of available data.

BATTERY SUMMARY

Battery ID	Cycle Count
BAT207394	130
BAT209729	108
BAT219641	143
BAT219783	120
BAT219858	136
BAT219920	128

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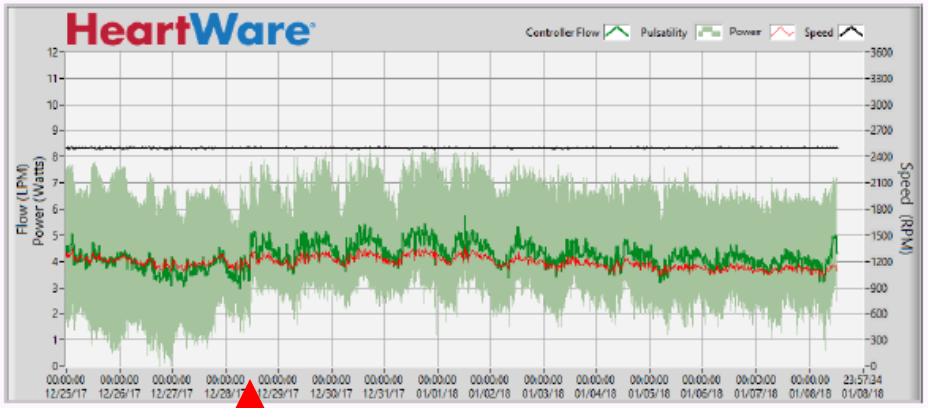

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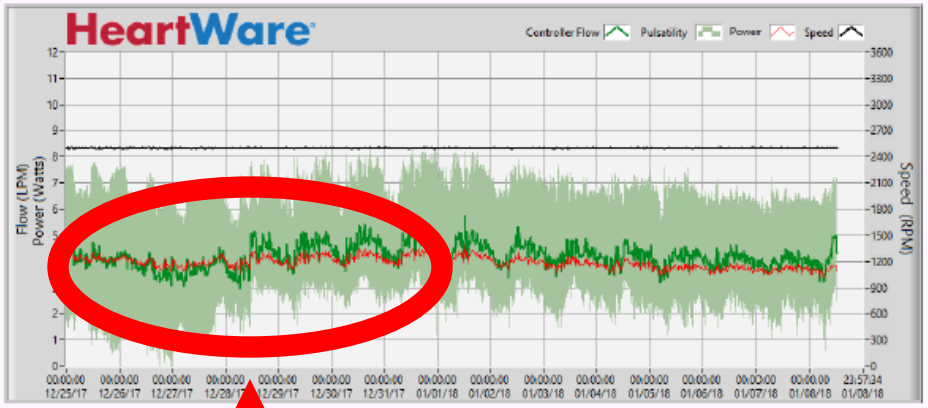

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TL

Záver

- Komplikácie LVAD sú časté
- Frekvencia podobná publikovaným dátam

- 81% pacientov po 1 roku přežíva s podporou alebo absolvovala transplantáciu srdca.
- Horšie výsledky u pokročilých štádií

European Journal of Heart Failure (2017) 19, 595–602
doi:10.1002/ejhf.779

REVIEW

Left ventricular assist device therapy in advanced heart failure: patient selection and outcomes

Finn Gustafsson[1]* and Joseph G. Rogers[2]

- LVAD implantation in **stable patients** is superior to that of 'crash and burn' patients or patients sliding on inotropes, **favouring early referral and implantation**

- LVAD implantation should be considered in selected INTERMACS 1–2 patients, **in all INTERMACS 3 patients**, and in severely symptomatic and motivated INTERMACS 4–7 patients who will accept a risk of adverse events in exchange for longer survival with a better functional status

Ďakujem za pozornosť

- Continuous-flow LVADs (CF-LVAD) have accounted for virtually 100% of devices in patients receiving DT since 2010 and actuarial survival is currently 81% at one year, 70% at two years, 60% at three years, and 48% at four years
- LVAD-related complications can occur in up to 60% of patients by six months post-implantation, and, by two years, 80% of patients experience at least one adverse event

Kirklin JK, Naftel DC, Pagani FD, Kormos RL, Stevenson LW, Blume ED, Myers SL, Miller MA, Baldwin JT, Young JB. Seventh INTERMACS annual report: 15,000 patients and counting. J Heart Lung

Najčastejšie komplikácie LVAD

- Infekcie
- CMP
- Trombózy čerpadla
- Krvácanie
- Renálne zlyhanie, MOF
- Pravostranné zlyhanie

- Včasné/neskoré (30 dní)

Cieľ

- Zhodnotenie výskytu včasných i neskorých komplikácií u pacientov po implantácií centrifugálnej dlhodobej mechanickej srdcovej podpory HeartWare™ HVAD™

Najčastejšie komplikácie LVAD

- Infekcie
- CMP
- Trombózy čerpadla
- Krvácanie

- non-surgical, adverse events and complications with the LVAD include bleeding complications, device thrombosis, ischaemic and haemorrhagic strokes, renal impairment, multi-organ failure and infections
- Včasné/neskoré (30 dní)

Najčastejšie komplikácie LVAD

- Infekcie
- CMP
- Trombózy čerpadla → INR 2,5-3,0 + ASA 100mg
- Krvácanie

- non-surgical, adverse events and complications with the LVAD include bleeding complications, device thrombosis, ischaemic and haemorrhagic strokes, renal impairment, multi-organ failure and infections
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- Infekcie
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INR 2,5-3,0 +
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- non-surgical, adverse events and complications with the LVAD include bleeding complications, device thrombosis, ischaemic and haemorrhagic strokes, renal impairment, multi-organ failure and infections
- Včasné/neskoré (30 dní)

Krvácanie

- Včasné – pooperačne, súvisiace s výkonom
  - Nechirurgické – 20-40% v 1M
- Neskoré – AV malformácie GIT, získaný von Willebrandov syndrom, hepatálna insuficiencia pri pravostrannom zlyhávaní
- 1. GIT – celkovo 21% pacientov/1R, (31%/5R)
- 2. CNS
- 3. Anémia nejasného povodu (20%)

Tromboembolické komplikácie

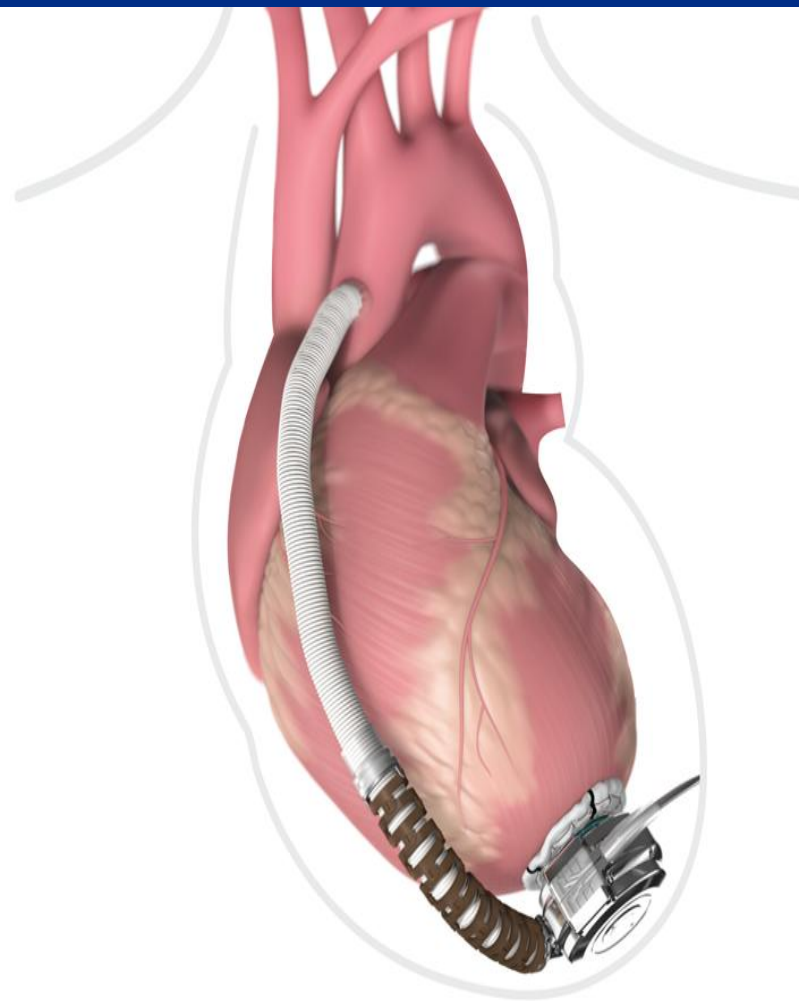
- iCMP/TIA
- nonCNS embolizácie
- Trombóza pumpy

Infekcie

- Celkové – pneumonia, sepsa
- DLI (driveline site infections)

AoR

Heartware HVAD



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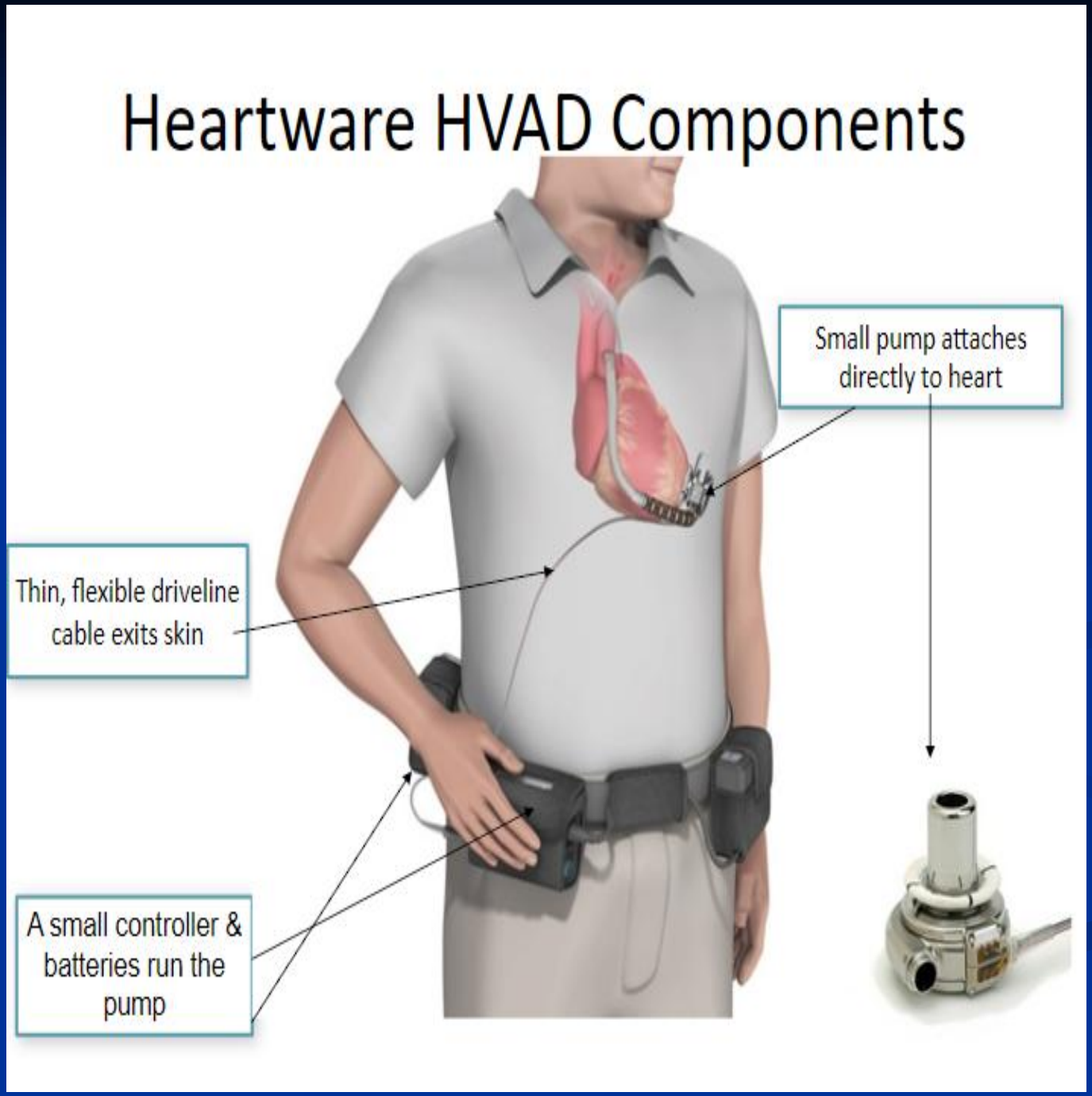

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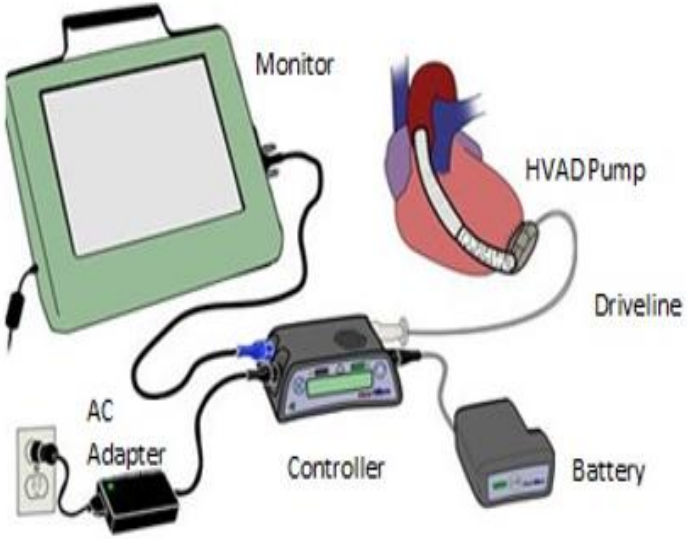

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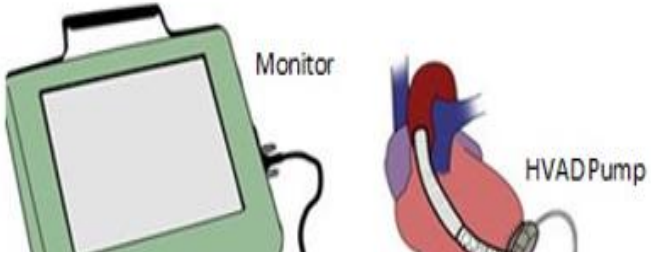

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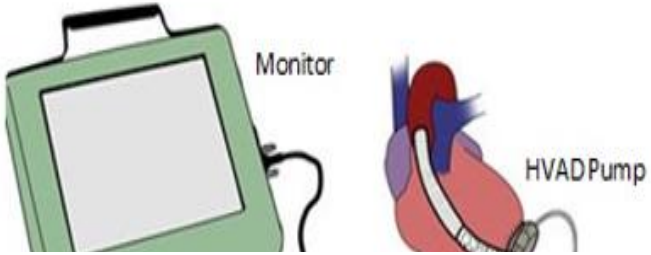

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46%

ELSEVIER

The Journal of Heart and Lung Transplantation

http://www.jhltonline.org

2017 INTERMACS REPORT

Eighth annual INTERMACS report: Special focus on framing the impact of adverse events

James K. Kirklin, MD,[a] Francis D. Pagani, MD, PhD,[b] Robert L. Kormos, MD,[c] Lynne W. Stevenson, MD,[d] Elizabeth D. Blume, MD,[e] Susan L. Myers, BBA, QMIS,[a] Marissa A. Miller, DVM, MPH,[f] J. Timothy Baldwin, PhD,[f] James B. Young, MD,[g] and David C. Naftel, PhD[a]

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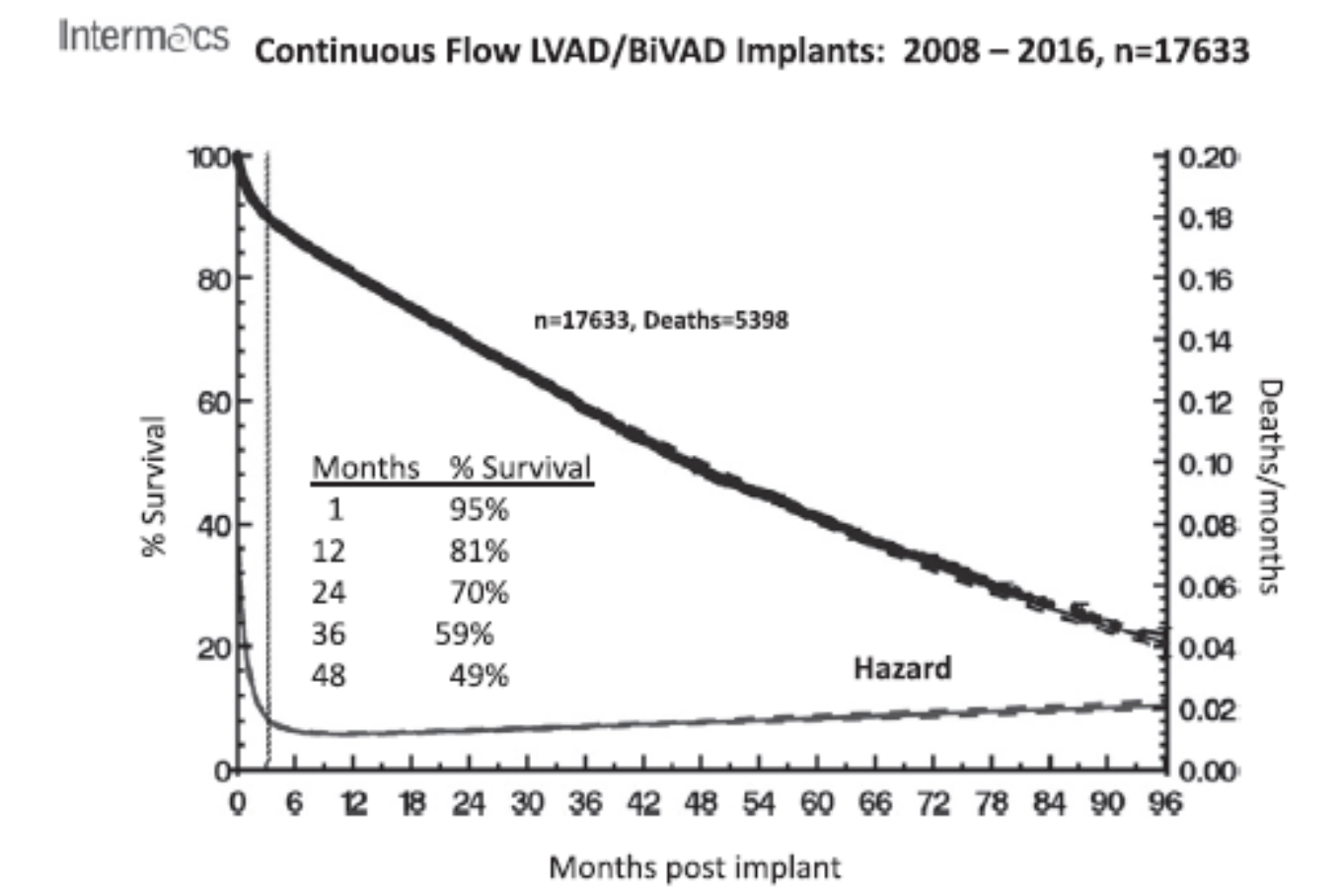

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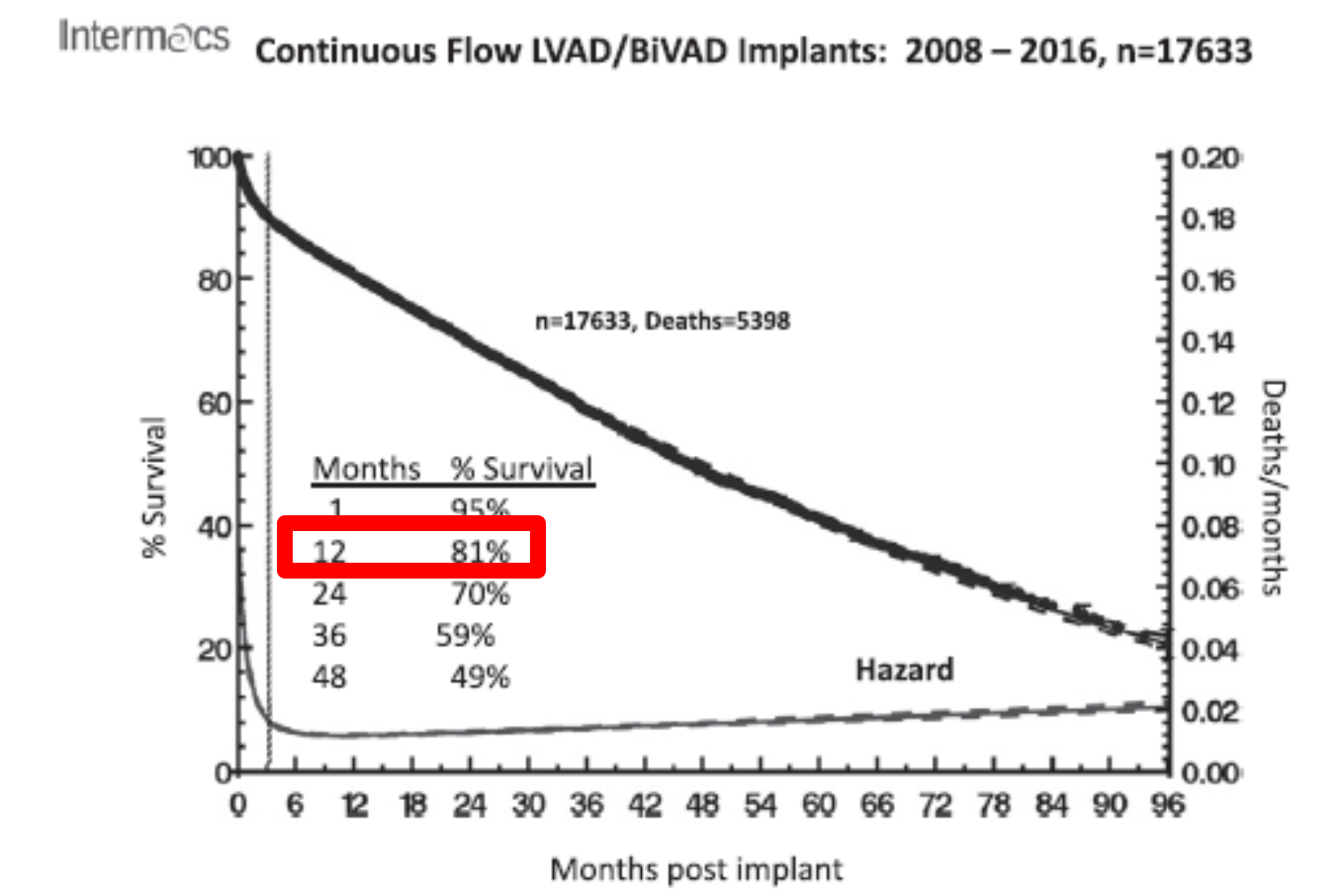

Nejake pocty z intermacsu, profily...