



**VŠEOBECNÁ FAKULTNÍ  
NEMOCNICE V PRAZE**



**1. LÉKAŘSKÁ  
FAKULTA**  
Univerzita Karlova

# **Chronická tromboembolická plicní hypertenze (CTEPH) v České republice v éře multimodální terapie**

**Lucie Miksová**

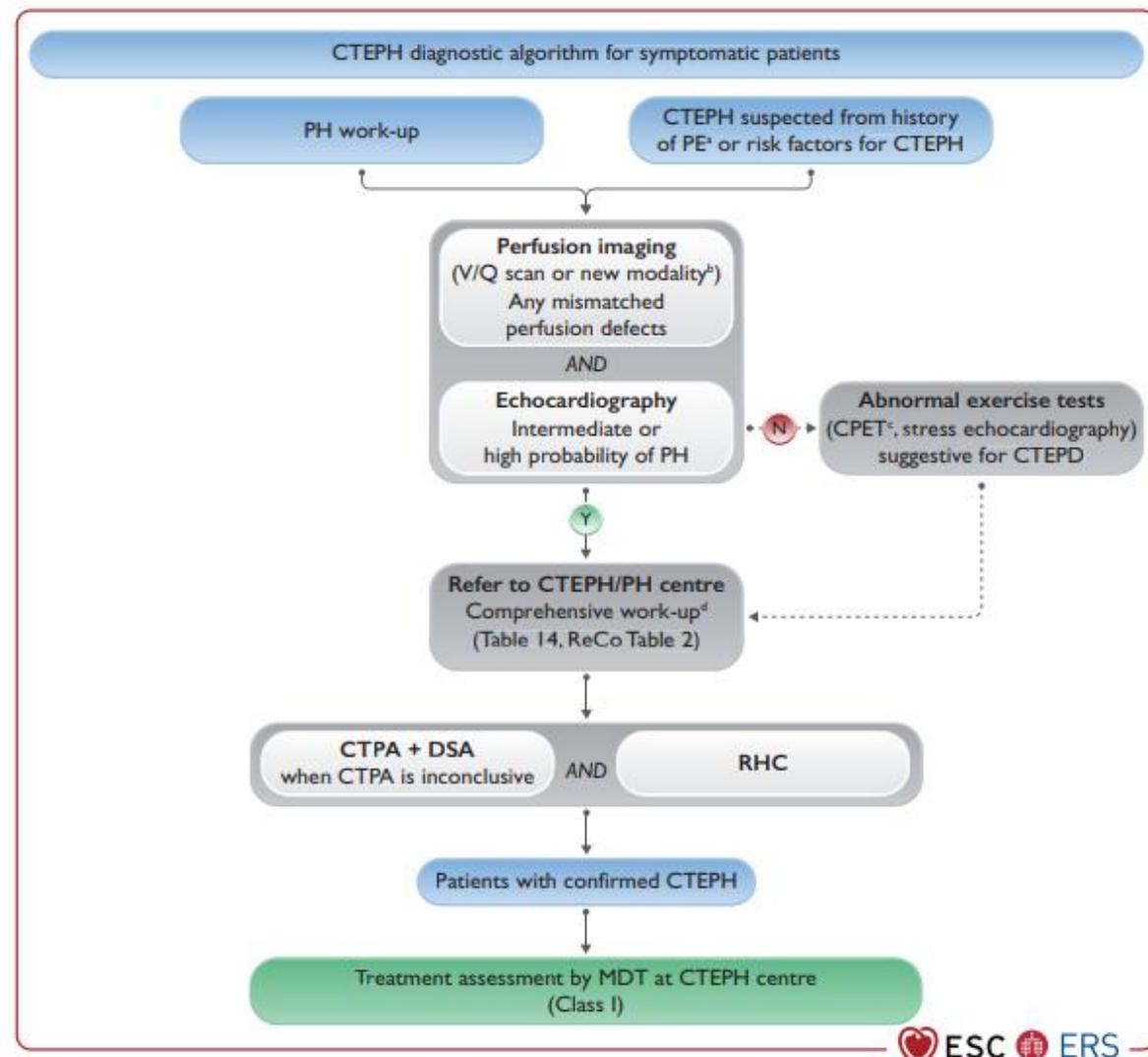
**II. Interní klinika Kardiologie a Angiologie**



KOMPLEXNÍ  
**KARDIO  
VASKULÁRNÍ**  
CENTRUM  
VFN Praha

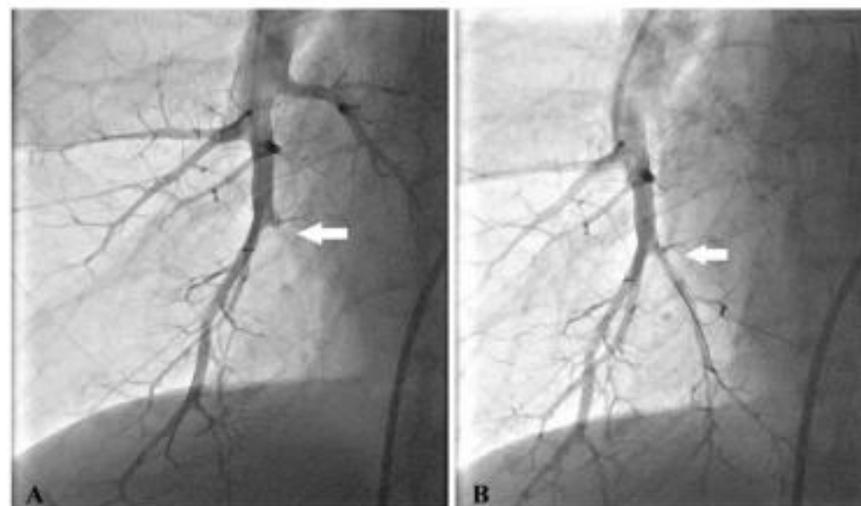
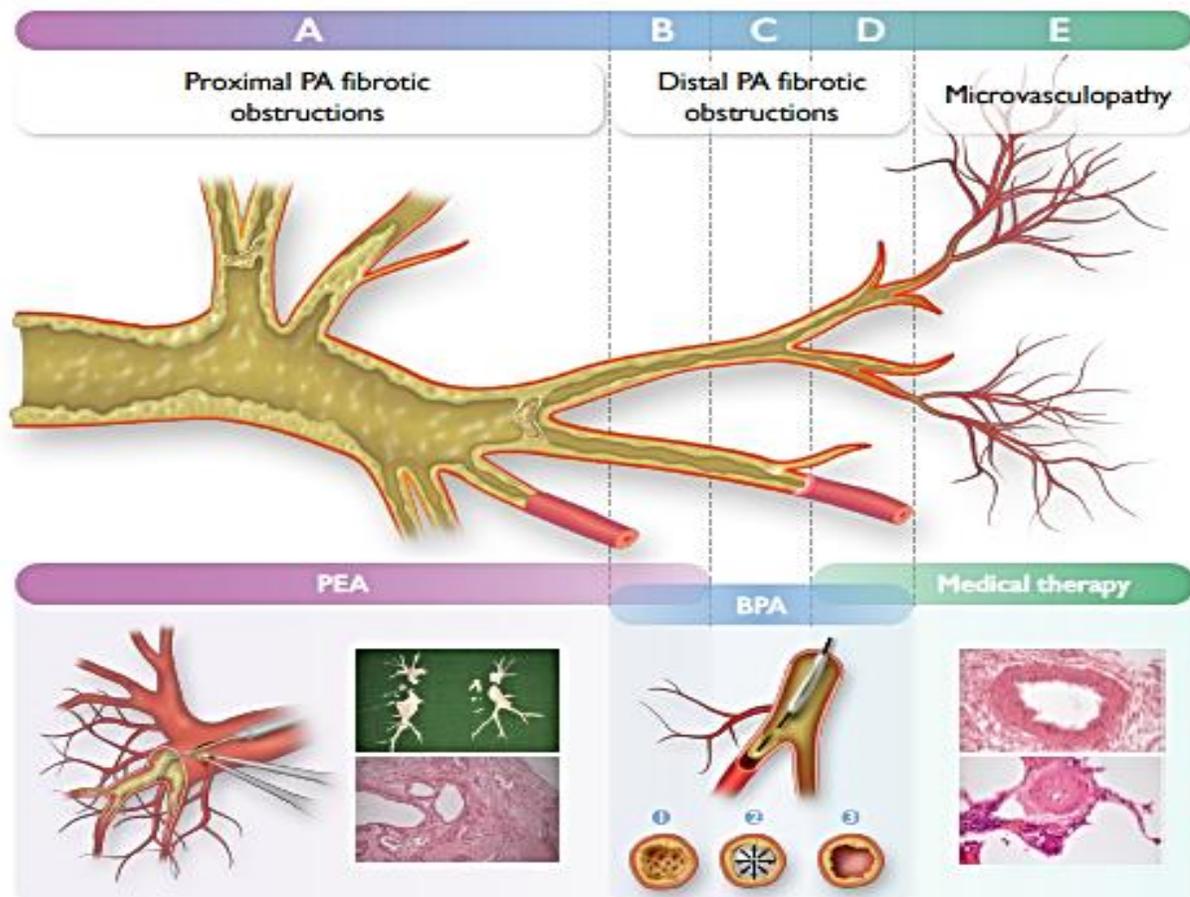
# CTEPD / CTEPH

- Chronická komplikace akutní PE
- 3-4% po PE
- Dg. po alespoň 3 měsících plné antikoagulační terapie u symptomatických jedinců s prokázanou poruchou perfúze plic



# Multimodální terapie CTEPH

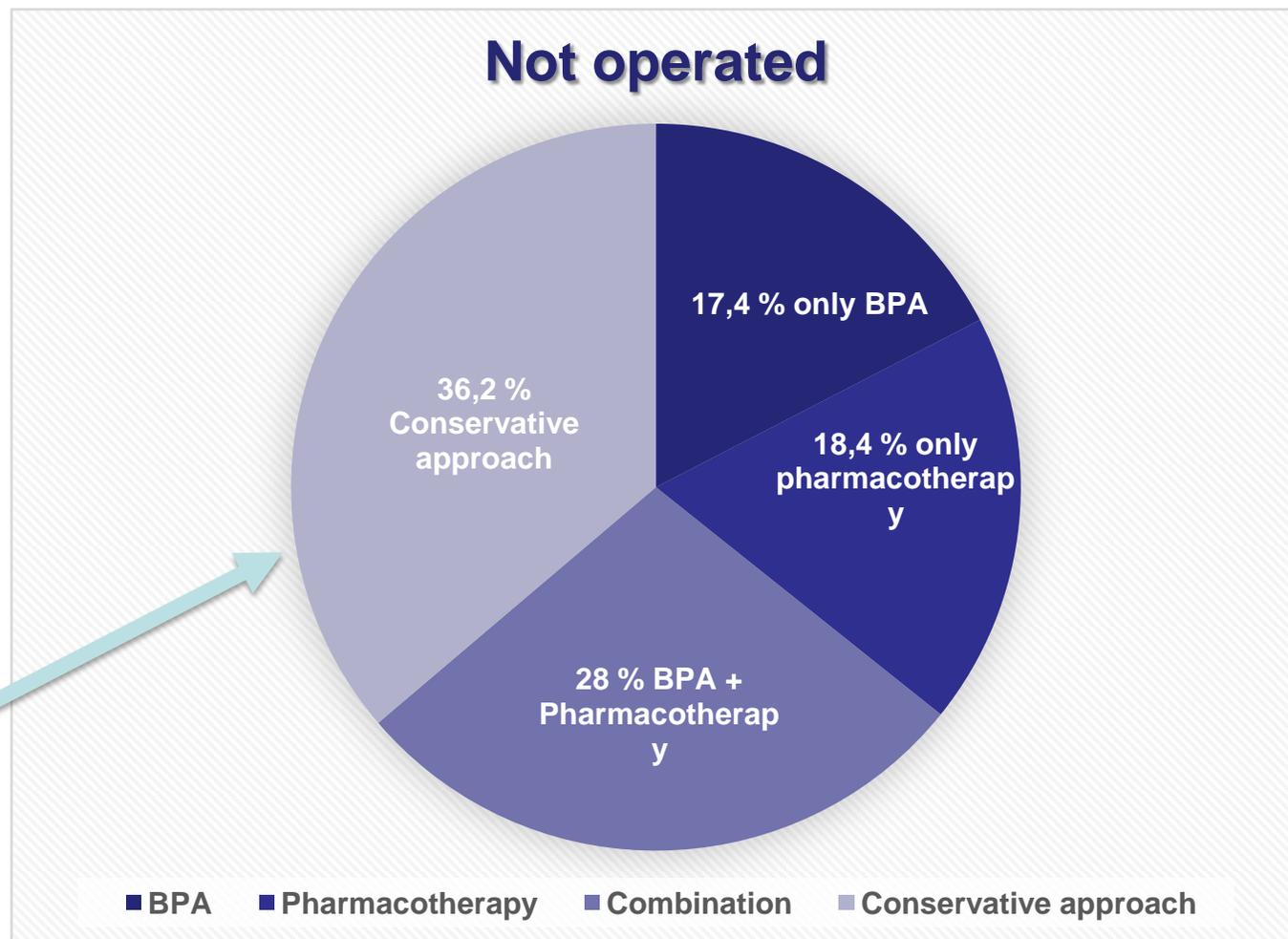
- Chirurgie (PEA), katetrizační léčba (BPA), farmakoterapie





# Nově diagnostikovaní pacienti mezi 2017 - 2022

	2017 - 2022
All patients, n (%)	321 (100 %)
<b>Operability, n (%)</b>	
- Operated	114 (35,5 %)
- Not operated	207 (64,5 %)



# Klinické a hemodynamické charakteristiky

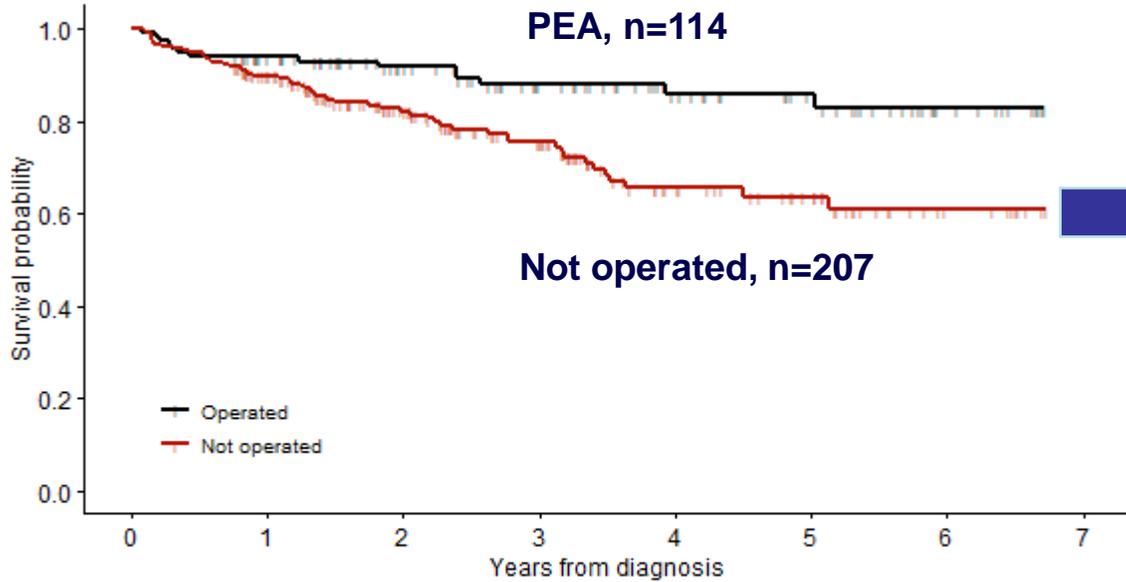
	Overall, n = 321
<b>Age at the diagnosis</b> (years, mean, SD)	63,9 (13,1)
<b>Sex</b> (n, %)	
- male	169 (52,6 %)
- female	152 (47,2 %)
<b>BMI</b> (mean, SD)	29,2 (5,8)
<b>NYHA</b> (n, %)	
II	63 (19,9 %)
III	240 (75,9 %)
IV	13 (4,1 %)
<b>6MWD</b> (m, mean, SD)	387,3 (134,6)
<b>NT-proBNP</b> (umol/l, mean, SD)	1854,9 (3092,5)

	All patients	Operated with residual PH
<b>PAMP</b> (mmHg, mean, SD)	40,4 (12,9)	49,4 (9,7)
<b>CI</b> (ml/min/m <sup>2</sup> , mean, SD)	2,4 (0,5)	2,4 (0,3)
<b>PVR</b> (W.U., mean, SD)	7,1 (3,9)	8,6 (2,6)

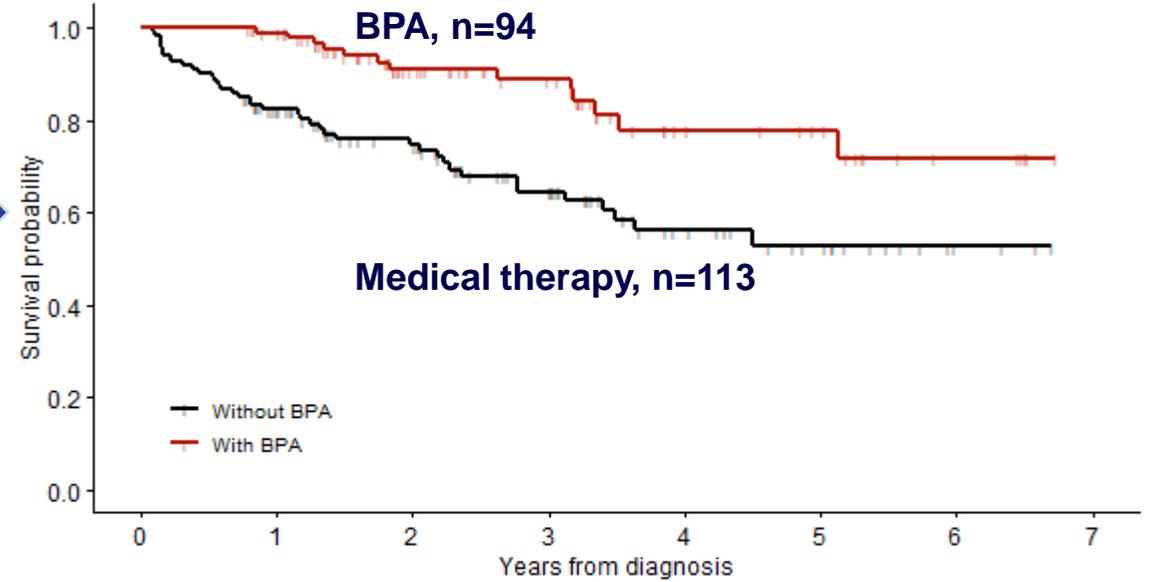
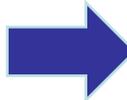
# Komorbidity pacientů dg. s CTEPH

	2017 – 2022, n = 321
Cancer, n (%)	37 (11,6 %)
Crohn's and ulcerative colitis, n (%)	5 (1,6 %)
Pacemaker, n (%)	13 (4,1 %)
COPD, n (%)	69 (21,6 %)
Ischemic heart disease, n (%)	55 (17,2 %)
Diabetes mellitus, n (%)	67 (20,9 %)

# Přežívání pacientů s CTEPH (2017 – 2022, n = 321)



Number at risk		0	1	2	3	4	5	6	7
—	114	99	77	56	39	28	12	0	0
—	207	174	114	80	40	27	8	0	0



Number at risk		0	1	2	3	4	5	6	7
—	113	85	61	40	21	13	3	0	0
—	94	89	53	40	19	14	5	0	0

Operated (n=114) vs not operated (n=207)

Not operated + BPA (n=94) vs not operated-no BPA (n=113)

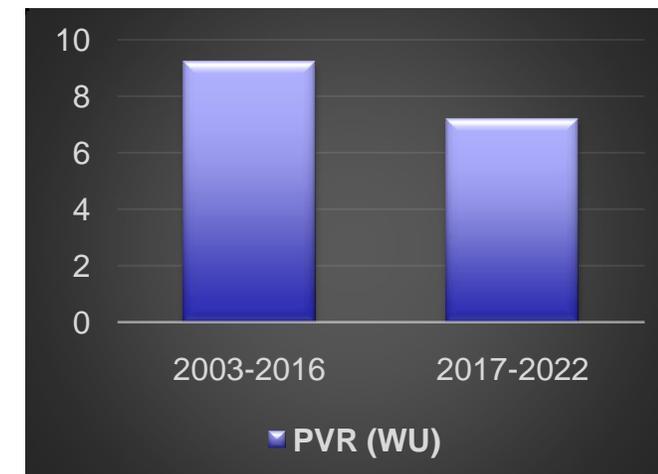
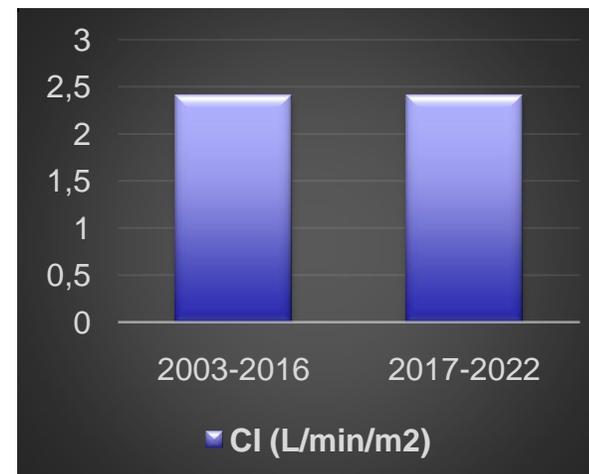
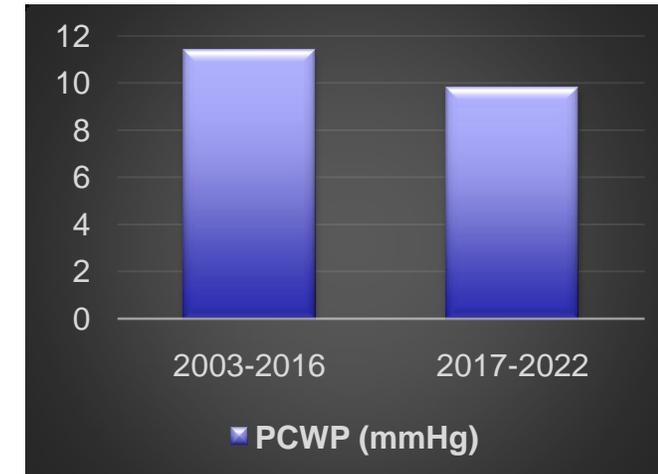
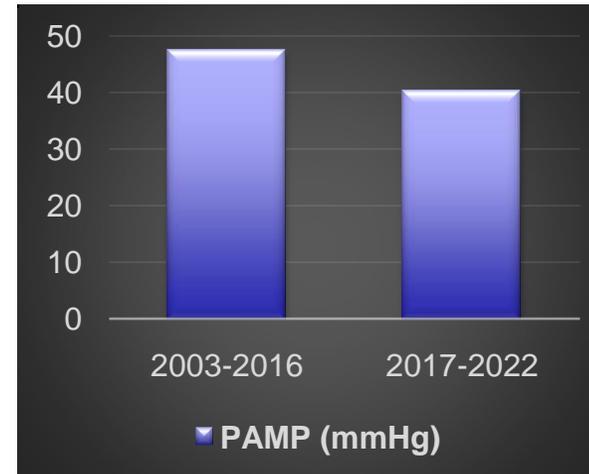
# **SROVNÁNÍ KOHORT PŘED ROKEM 2017 A MEZI LETY 2017-2022**

# Kohorty před rokem 2017 vs. 2017 - 2022

	Before 2017	2017 - 2022
All patients, n (%)	453 (100 %)	321 (100 %)
<b>Operated, n (%)</b>	<b><u>236 (52,1 %)</u></b>	<b><u>114 (35,5 %)</u></b>
Not operated, n (%)	217 (47,9 %)	207 (64,5 %)

# CTEPH v České republice do roku 2017 vs. 2017 – 2022

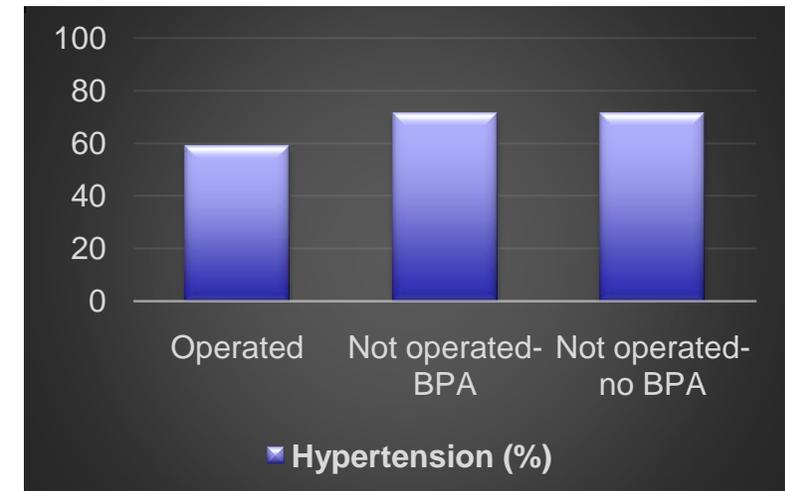
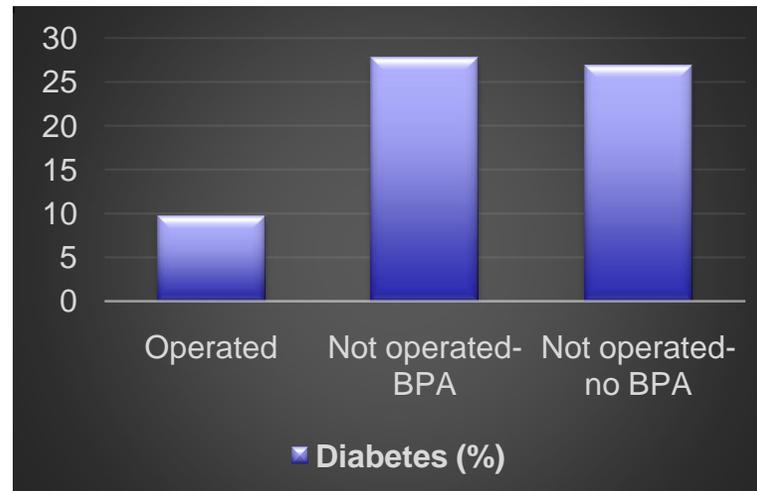
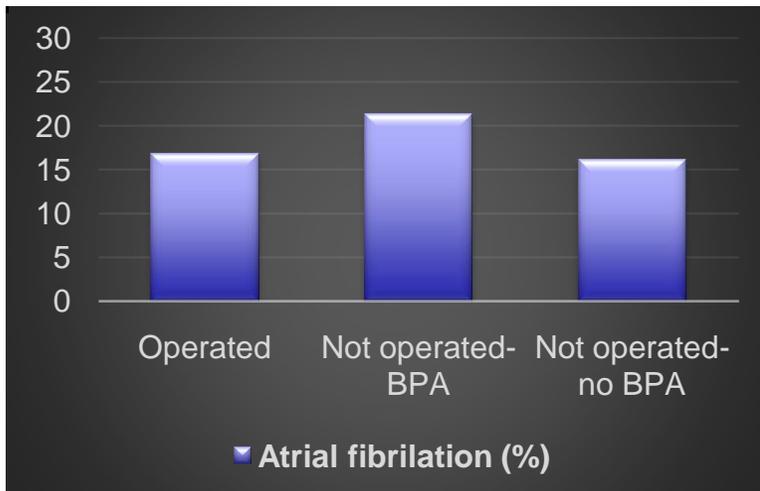
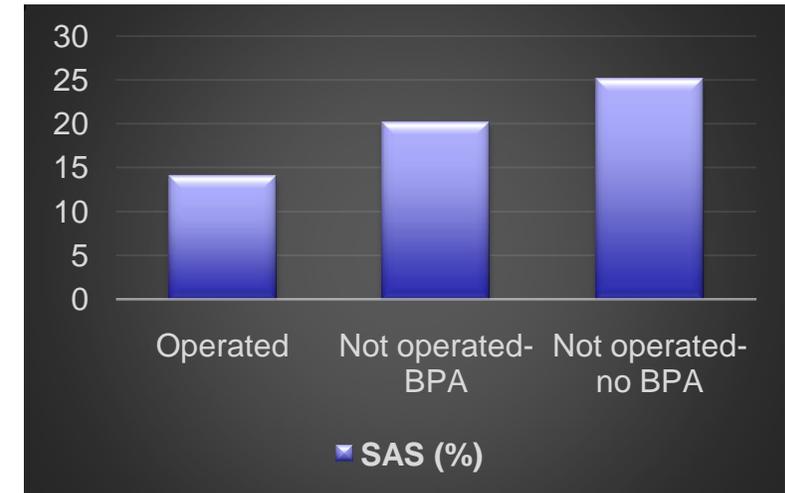
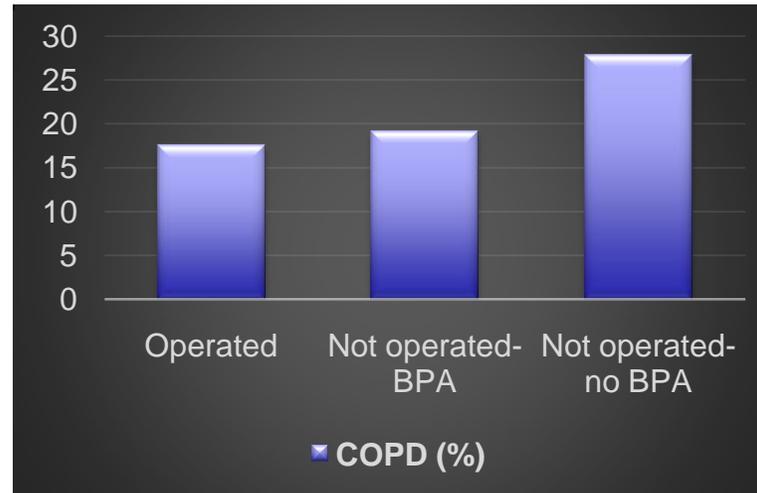
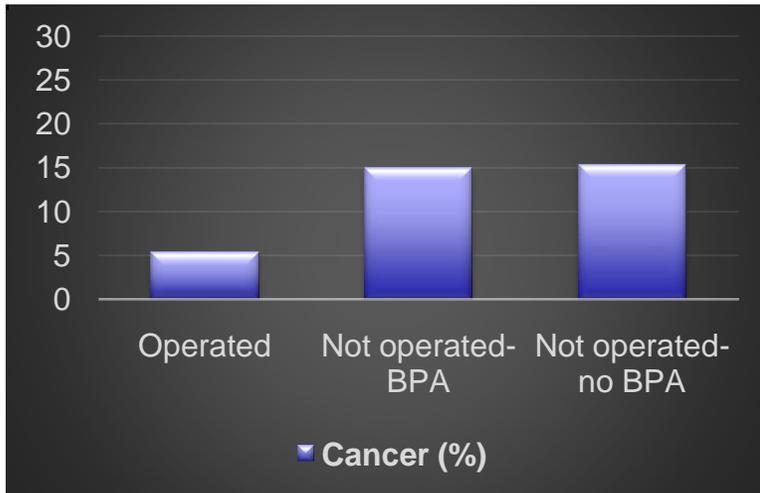
	Year of diagnosis	
	2003-2016, N = 453	2017-2022, N = 321
All patients, n (%)	453 (100.0%)	321 (100.0%)
Operability, n (%)		
Operated	236 (52.1%)	114 (35.5%)
Not operated	217 (47.9%)	207 (64.5%)
Age at diagnosis [years]		
Mean (SD)	63.1 (12.55)	63.9 (13.14)
Median (Range)	65.2 (18.8 - 84.8)	66.9 (19.7 - 87.3)
Sex, n (%)		
Male	247 (54.5%)	169 (52.6%)
Female	206 (45.5%)	152 (47.4%)
BMI		
Mean (SD)	28.4 (5.42)	29.2 (5.79)
Median (Range)	27.8 (17.1 - 58.1)	28.8 (15.8 - 48.3)
Years from 1 <sup>st</sup> PE to diagnosis		
Median (Range)	2.2 (0.0 - 43.2)	1.0 (0.0 - 39.0)
NYHA, n (%)		
I	2 (0.5%)	0 (0.0%)
II	34 (7.8%)	63 (19.9%)
III	385 (88.1%)	240 (75.9%)
IV	16 (3.7%)	13 (4.1%)
6MWD (m)		
Mean (SD)	339.7 (110.15)	387.3 (134.64)



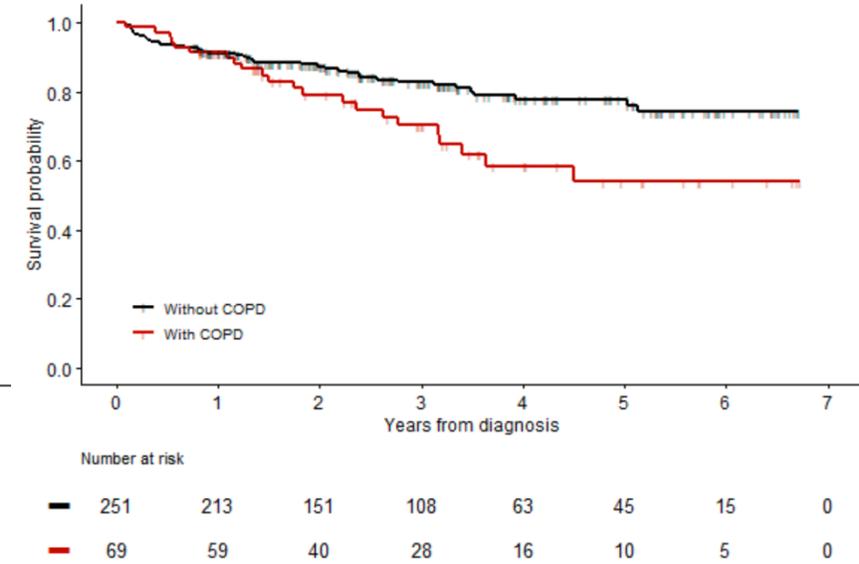
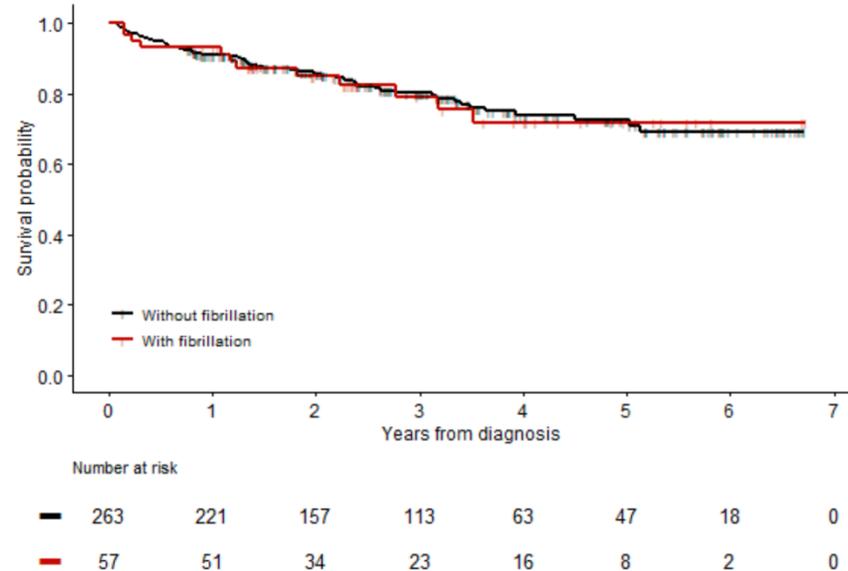
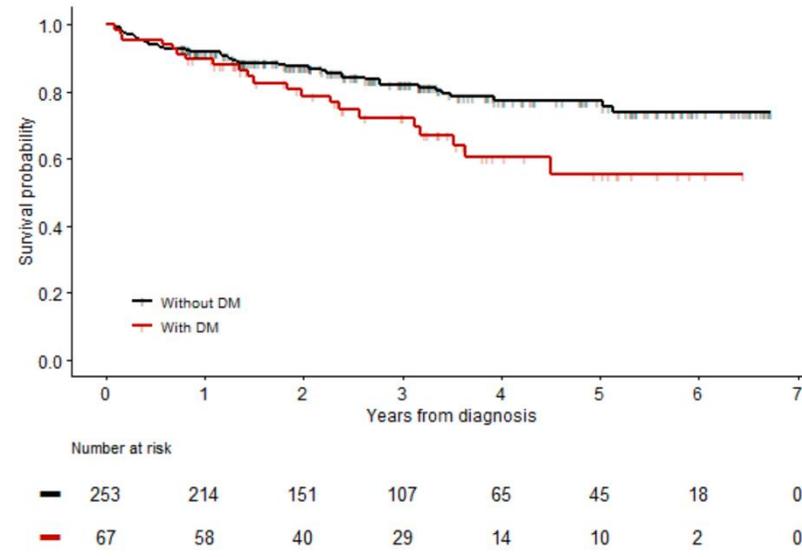
# CTEPH a komorbidita

	Before 2017, n = 453	2017 – 2022, n = 321
Cancer, n (%)	5 (1,1 %)	37 (11,6 %)
Crohn's and ulcerative colitis, n (%)	2 (0,5 %)	5 (1,6 %)
Pacemaker, n (%)	2 (0,5 %)	13 (4,1 %)
COPD, n (%)	52 (11,7 %)	69 (21,6 %)
Ischemic heart disease, n (%)	83 (18,7 %)	55 (17,2 %)
Diabetes mellitus, n (%)	41 (9,2 %)	67 (20,9 %)

# CTEPH a komorbidita



# CTEPH a komorbidita



**DIABETES**  
Survival from diagnosis  
(all newly diagnosed CTEPH patients)

**ATRIAL FIBRILATION**  
Survival from diagnosis  
(all newly diagnosed CTEPH patients)

**COPD**  
Survival from diagnosis  
(all newly diagnosed CTEPH patients)

# Závěr

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- Došlo ke zkrácení času k diagnóze CTEPH, časnější reference pacientů
- V době dg. lepší klinický i hemodynamický stav
- **Vysoká míra komorbidit** ovlivňující prognózu pacientů
- **Zlepšení prognózy neoperovaných pacientů v éře multimodální terapie (BPA)**



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**Děkuji za pozornost**



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