

Incidence and hemodynamic data of Latvian CTEPH patients diagnosed in 2024-2025

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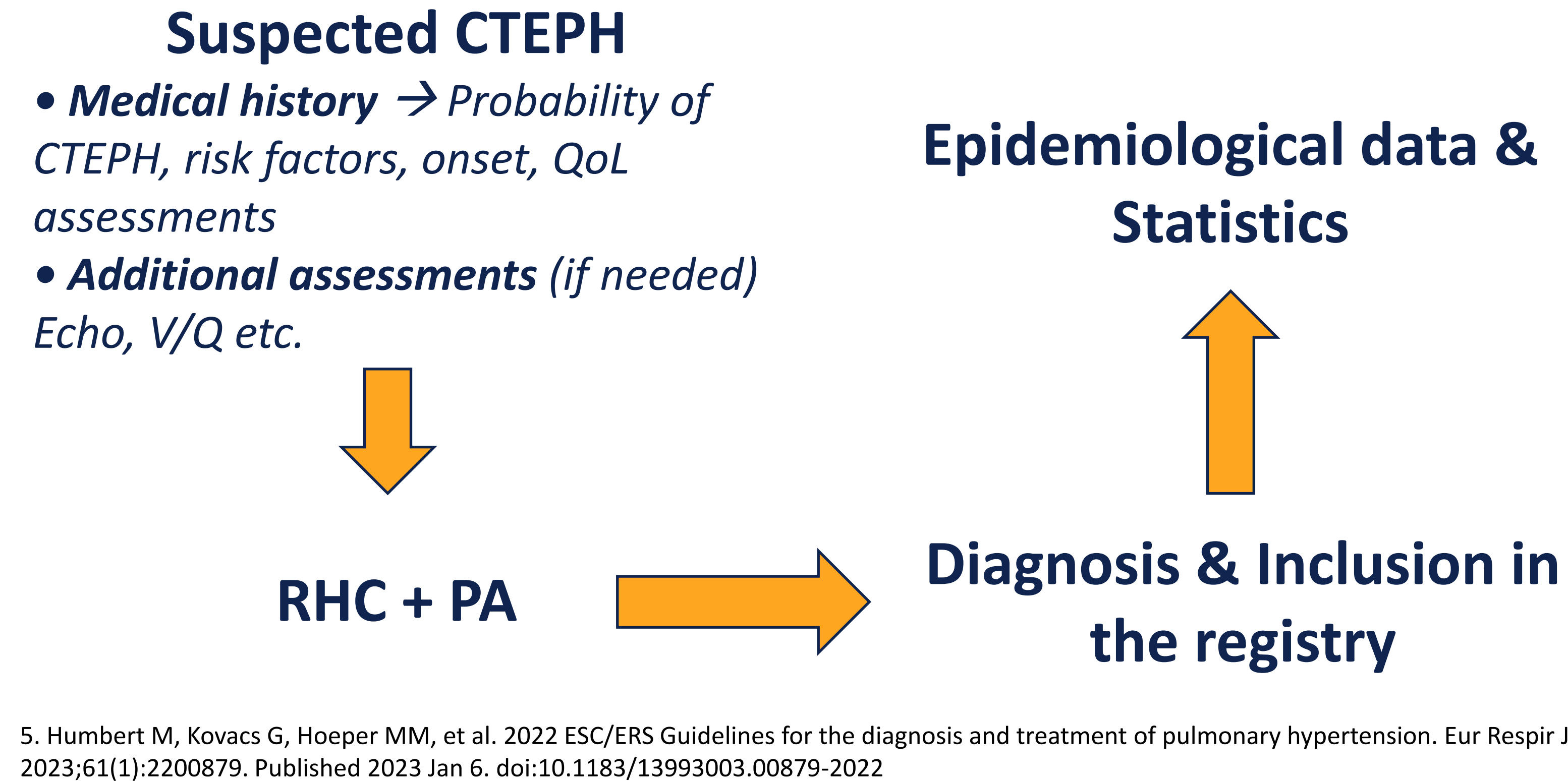
Introduction

- **CTEPH incidence** is variable throughout the world;
 - Registries: **4-7 cases per million**^{1,2}
 - Calculations: **3-30 cases per million**³
 - Based on epidemiology of pulmonary embolism (PE);*
- **Diagnostic delay** is associated with higher mortality;
 - 14 month delay → Life expectancy **reduced by 3 years**⁴
- **Latvian pulmonary hypertension centre**;
 - Registries **since 2007**;
 - The **only** PH centre in Latvia;
 - Present **nationwide epidemiological data**;

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 2. Kramm T, Wilkens H, Fuge J, et al. Incidence and characteristics of chronic thromboembolic pulmonary hypertension in Germany. Clin Res Cardiol. 2018;107(7):548-553. doi:10.1007/s00392-018-1215-5
 3. Lang IM, Pesavento R, Bonderman D, Yuan JX. Risk factors and basic mechanisms of chronic thromboembolic pulmonary hypertension: a current understanding. Eur Respir J. 2013;41(2):462-468. doi:10.1183/09031936.00049312
 4. Boon GJAM, van den Hout WB, Barco S, et al. A model for estimating the health economic impact of earlier diagnosis of chronic thromboembolic pulmonary hypertension. ERJ Open Res. 2021;7(3):00719-2020. Published 2021 Sep 6. doi:10.1183/23120541.00719-2020

Methods

- **Study population**:
 - All CTEPH patients in Latvia 01.01.2024 – 31.12.2025
 - Diagnosed in accordance with ESC/ERS PH 2022 guidelines⁵



Results

- **Incidence**
 - RHC + PA performed for 27 patients;
 - 20 patients diagnosed during 2 years;
 - 2024: 15;**
 - 2025: 5;**
 - Incidence – **5.46 cases/million**;
 - 2 groups compared:
 - «Diagnosed earlier» <2 years;
 - «Diagnosed later» ≥2 years;
- **Hemodynamic data**
 - «Later diagnosed» group – worse!
- **Functional class**
 - «Earlier diagnosed» 6/9 (67%) WHO FC II
 - «Later diagnosed» 5/11 (45%) WHO FC II
 - Rest – WHO FC III

Table 1. Patients' road to diagnosis

	All patients (n=20) Median (IQR)	Diagnosed earlier (n=9) Median (IQR)	Diagnosed later (n=11) Median (IQR)
Age, years	67 (18)	60 (18)	71 (13.5)
Male sex, %	65	68	62
Time till diagnosis, months	24 (20)	14 (6)	30 (18)
Doctors visited before referral to PH centre	3 (2)	2 (2)	4 (2)
Examinations where signs of CTEPH are missed	1 (3)	1 (3)	2 (3)

Table 2. Patients' clinical data

	All patients (n=20) Median (IQR)	Diagnosed earlier (n=9) Median (IQR)	Diagnosed later (n=11) Median (IQR)
mPAP, mmHg*	43.0 ±7.1	39.6 ±7.7	45.9 ±8.0
PAWP, mmHg	10 (9)	11 (9)	9 (10)
PVR, WU*	9.18 ±3.99	7.49 ±3.96	10.62 ±4.05
6MWD, m	360 (366)	390 (280)	343 (385)
NT-proBNP, pg/mL	901 (1221)	806 (2318)	956 (1023)

* Calculated using mean (±SD)

Discussion

- CTEPH is **underrecognized and underestimated**;
 - In Latvia median time from symptom onset to diagnosis – **24 months**;
 - Many patients remain undiagnosed due to **comorbidities** mimicking CTEPH;
- CTEPH is usually **not in the differential**;
 - Median physician visits required for referral to PH centre – **3!**
 - Often CTEPH is **missed** when it is visible;
 - Echocardiography;*
 - CTPA;*
- Delay in diagnosis leads to **significant worsening**;
 - Worsening **heart failure**;
 - More severe **pulmonary hypertension**;

Conclusions

- Our reported incidence of **5.46 cases/million** is in line with data of **other registries**^{1,2}
- Earlier **recognition** and **referral** to a PH centre correlate with milder pulmonary hypertension and heart failure;
- Nationwide **registries** serve an **educational purpose** to assess differences in the **complicated diagnostic pathways** of CTEPH patients;
- Physician **educational activities** like seminars, conferences are needed to increase awareness;
 - Twice a year in Latvia – «Rare disease conference»
- Patients with suspicion of CTEPH must be referred to a **specialized PH centre** to confirm the diagnosis and provide the treatment.

Contact

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