



Klinika Chirurgii Naczyniowej,  
Ogólnej i Angiologii  
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PE

# PE - reason/facts



- ◆ Usually originate from DVT
- ◆ In 70% pt. DVT is easy recognised (USG)
- ◆ 50% with proximal DVT has asymptomatic PE

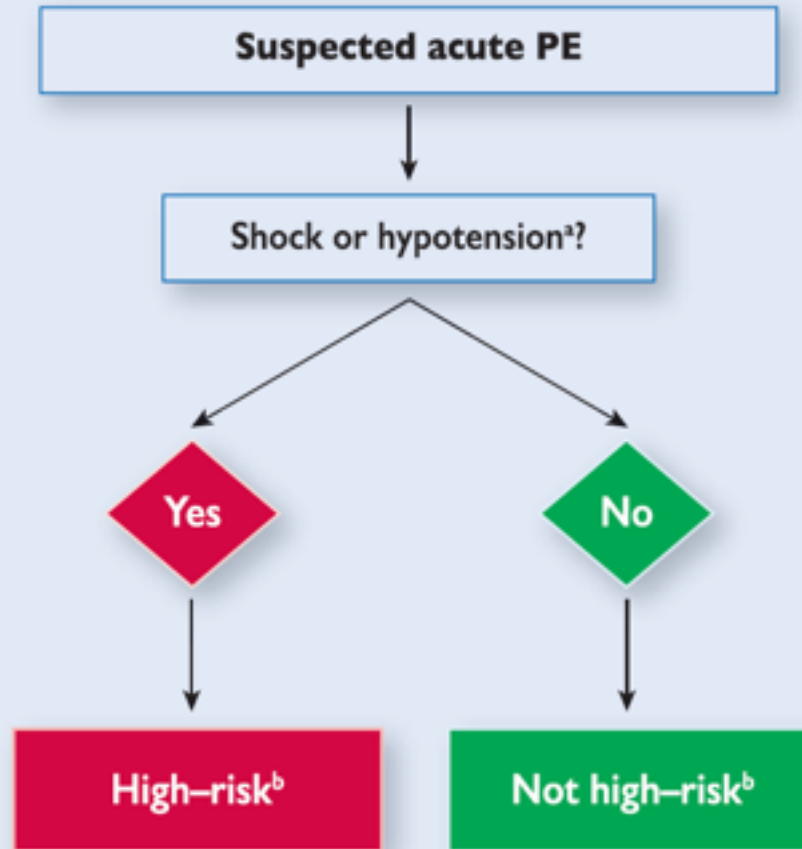
# Clinical types

**Low** risk of death

**High** risk of death

# Acute Pulmonary Embolism (APE) low risk: hemodynamically stable, no shock or hypotonia

RISK of death



**low risk PE** have different strategy then **high risk PE**

# Clinical symptoms

**Symptoms influenced probability Score**

**GENEVA Modified Score recommended**

(No need to remember all unspecific symptoms)

# Assess clinical probability Modified Geneva Score (reccommended)

## Risk factors

Age > 65 lat	+1
Previous VTE	+3
Surgical intervention within a month	+2
Cancer	+2

## Inteview

Leg pain unilateral.	+3
Hemaphthisis	+2

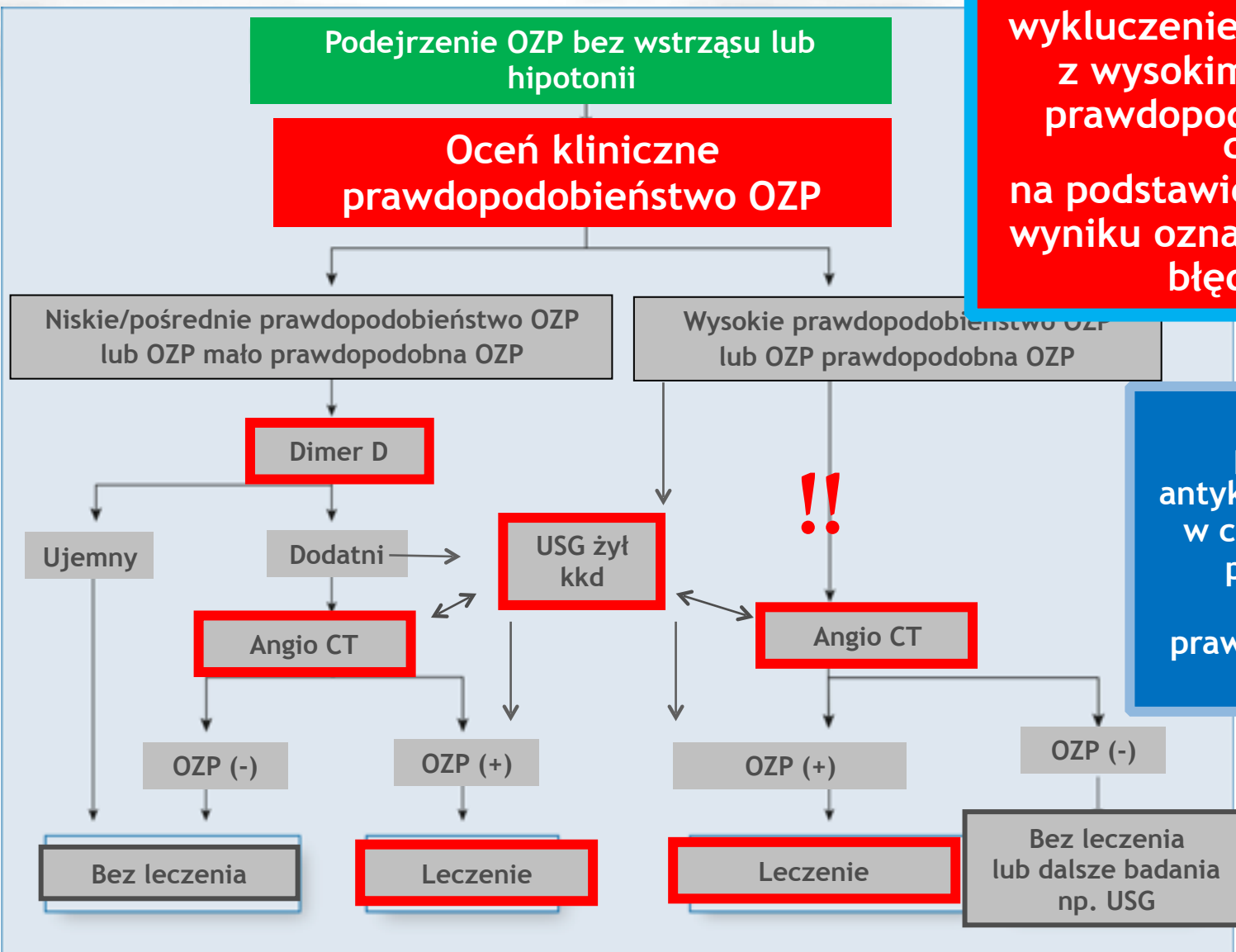
## Symptoms

Hart rate	
75 - 94 /min	+3
> 95 /min	+5
Leg pain whilst palpation along the vein And swollen leg (one site)	+4

## Clinical probability

Low:	0 - 3
Moderate :	4 - 10
High :	≥11

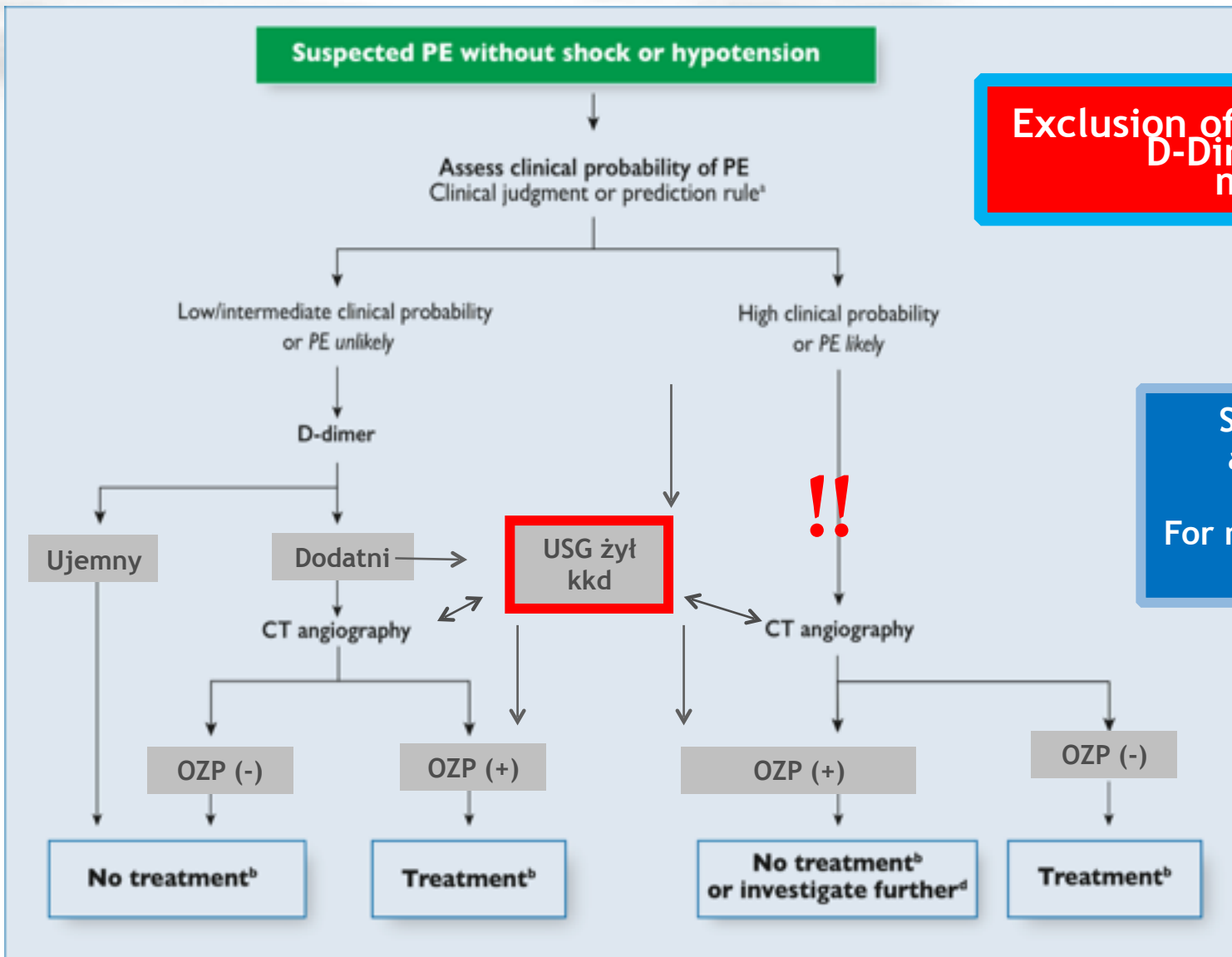
# Strategia diagnostyczna chorych z podejrzeniem płucnej (OZP) niewysokiego ryzyka



wykluczenie OZP u chorego z wysokim klinicznym prawdopodobieństwem choroby na podstawie negatywnego wyniku oznaczenia DD jest błędem!!!

rozpoczęcie parenteralnej antykoagulacji jeszcze w czasie diagnostyki przy wysokim i pośrednim prawdopodobieństwie OZP

# Diagnostic strategy in (PE) low risk



Exclusion of PE based of low D-Dimer level is a mistake!!!

Start parenteral antykoagulation immidietly For moderate or high PE probability



# Diagnostic decision

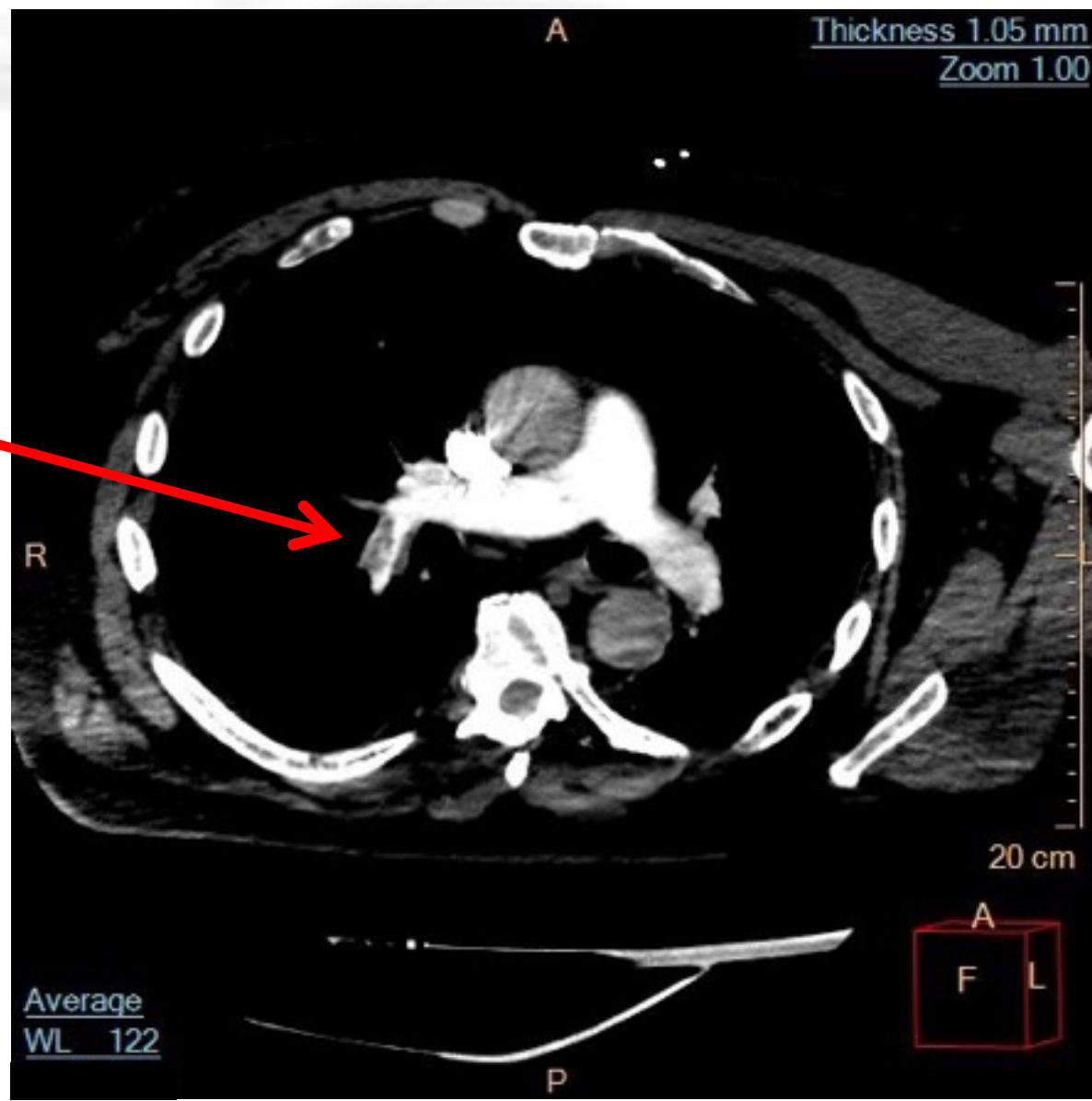
- ◆ **Low/moderate PE probability**
  - Check D-Dimer
  - Elevate D-Dimer start angioCT
- ◆ **High PE probability**
  - No need D-dimer check,
  - Order immediat angioCT

- D-dimer

PE probability

# Angio CT

PE confirmation



# Prognosis -recommendations

<b>First look for shock/hipotonia = high risk PE</b>	<b>I</b>	<b>B</b>
<i>For no high risk use Validated Scores eg: sPESI (distinguish low and moderate risk)</i>	<b>IIa</b>	<b>B</b>
<i>Moderated risk - consider Echo of the hart (RV function and myocardium damage, pulmonary presure)</i>	<b>IIa</b>	<b>B</b>

## PESI (sPESI ) Score (30days mortality risk)

Parametr	Punkty
Wiek >80 r.ż.	1
Nowotwór	1
Niewydolność serca lub przewlekła choroba płuc	1
Czynność serca $\geq 110$ /min	1
Skurczowe ciśnienie tętnicze <100 mmHg	1
Saturacja krwi tętniczej <90%	1
<b>Klasy ryzyka</b>	
Niskie ryzyko wczesnego zgonu	0 pkt
Wysokie ryzyko wczesnego zgonu	$\geq 1$ pkt

sPESI 0 - low risk

1.1% death risk

1.5% PE recurrence or bleeding

# Prognosis

Death risk		Parametrs			
		<i>Shock Hipotonia</i>	<i>sPESI &gt;0</i>	<i>RV congestion</i>	<i>Pro-BNP</i>
<b>High</b>		+	(+)	+	(+)
<b>Moderate</b>	<i>Moderate - high</i>	-	+	<i>Oba dodatnie</i>	
	<i>Moderate - low</i>	-	+	<i>Jeden dodatni</i>	
<b>Low</b>		-	-	<i>Opcjonalnie</i>	

**PE high risk about 5% all patients**

# Treatment in PE

Death risk

High

ICU/HDU  
Primary  
Reperfusion

UFH + Trombolizis  
or  
Embolektomy/  
AngioJet

Moderate high

Internal Ward  
Antycoagulants  
Consider reperfusion

UFH  
(LMHW later)

Moderate low

Internal Ward  
Antycoagulants

LMWH/UFH  
(Oral antycoag.  
later)

Low

Outpatient

LMWH+AWK  
RIWA  
LMWH+DABI  
APIXA

# Summary

# Simplify diagnostic pathway

Modified Geneva Score = symptoms

D-dimer

>500ng

Pro BNP

>limit

(no CKD, CCF, AF)

<500ng

Yes

No

TEE/UKG

RV congestion

(>50mmHg i PA)

Yes

No

Look For  
Other reason of SOB  
if not high probability of PE

Need urgent  
Intervention

Conservative  
treatment