



# LESSONS LEARNED FROM MATERNAL MORTALITY CASES

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# Trends in Maternal Mortality: 1990 to 2010

WHO, UNICEF, UNFPA and The World Bank estimates

Country	MMR <sup>a</sup>	Range of MMR uncertainty		Number of maternal deaths <sup>a</sup>	Lifetime risk of maternal death <sup>a</sup> : 1 in:
		Lower estimate	Upper estimate		
Togo	300	180	530	580	80
Tonga	110	50	260	3	230
Trinidad and Tobago	46	26	84	9	1300
Tunisia	56	29	110	100	860
Turkey	20	13	32	260	2200

Country	MMR <sup>a</sup>					% change in MMR between 1990 and 2010	Average annual % change in MMR between 1990 and 2010 <sup>b</sup>	Range of uncertainty on annual % change in MMR		Progress towards improving maternal health <sup>c</sup>
	1990	1995	2000	2005	2010			Lower estimate	Upper estimate	
Turkey	67	51	39	28	20	-69	-5.8	-6.2	-5.4	

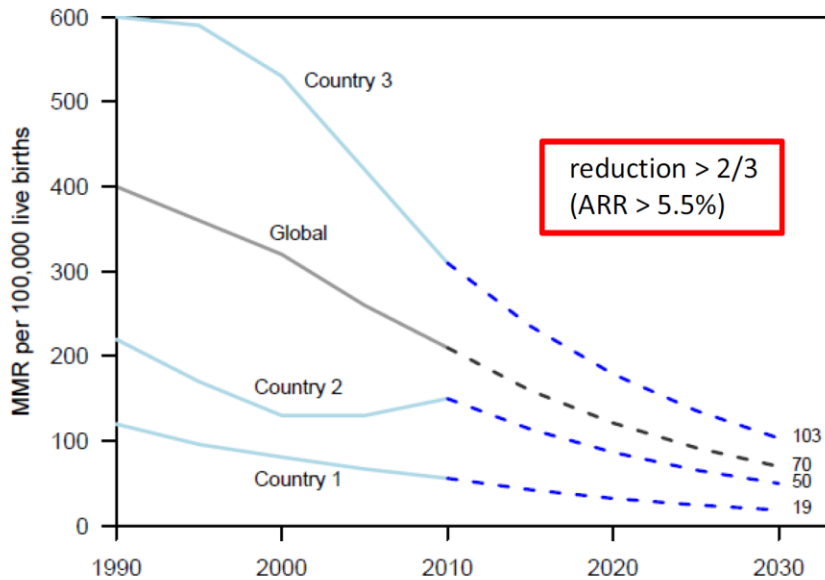


Country Consultation on Targets and Strategies for Ending Preventable Maternal Mortality (EPMM)

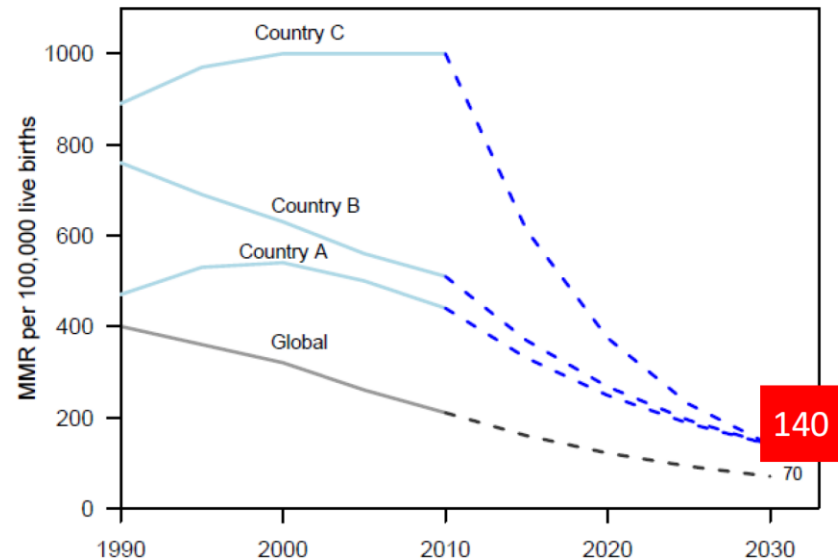
14-16 April, 2014 - Bangkok, Thailand

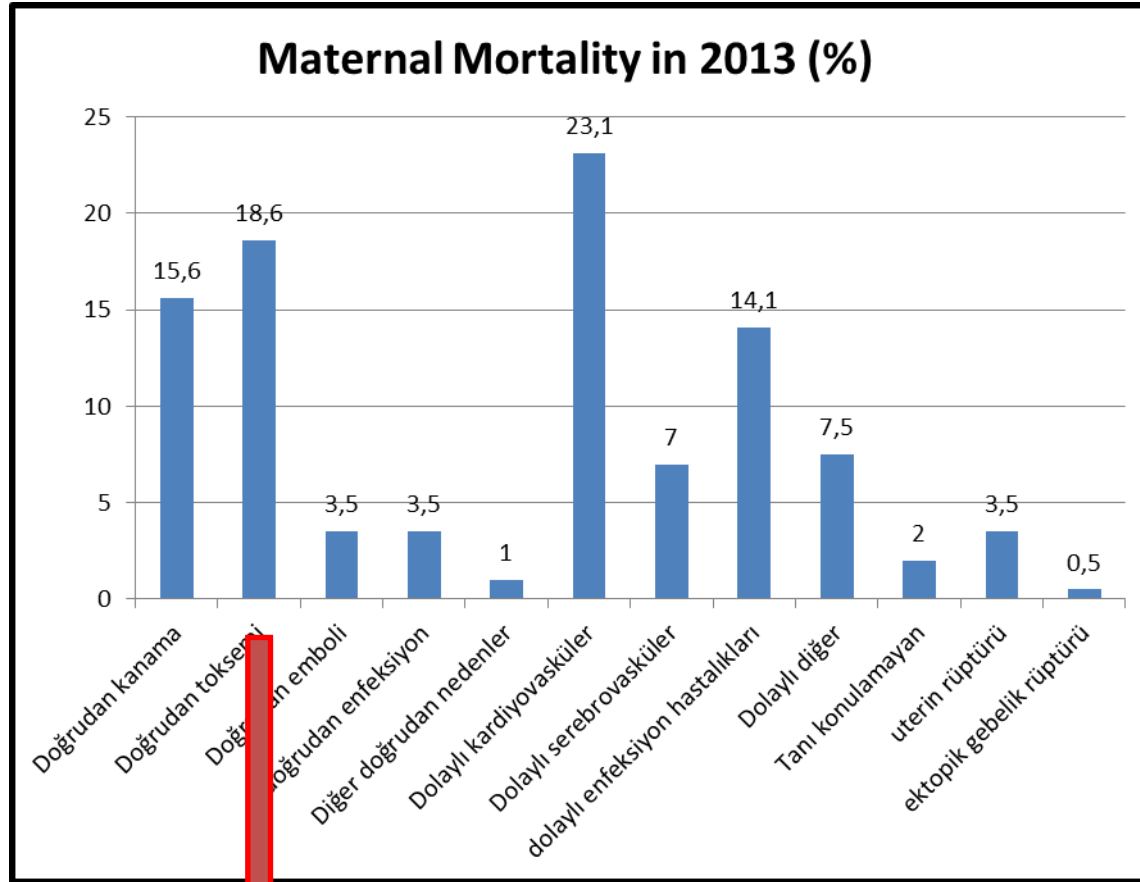


Countries with baseline MMR < 420

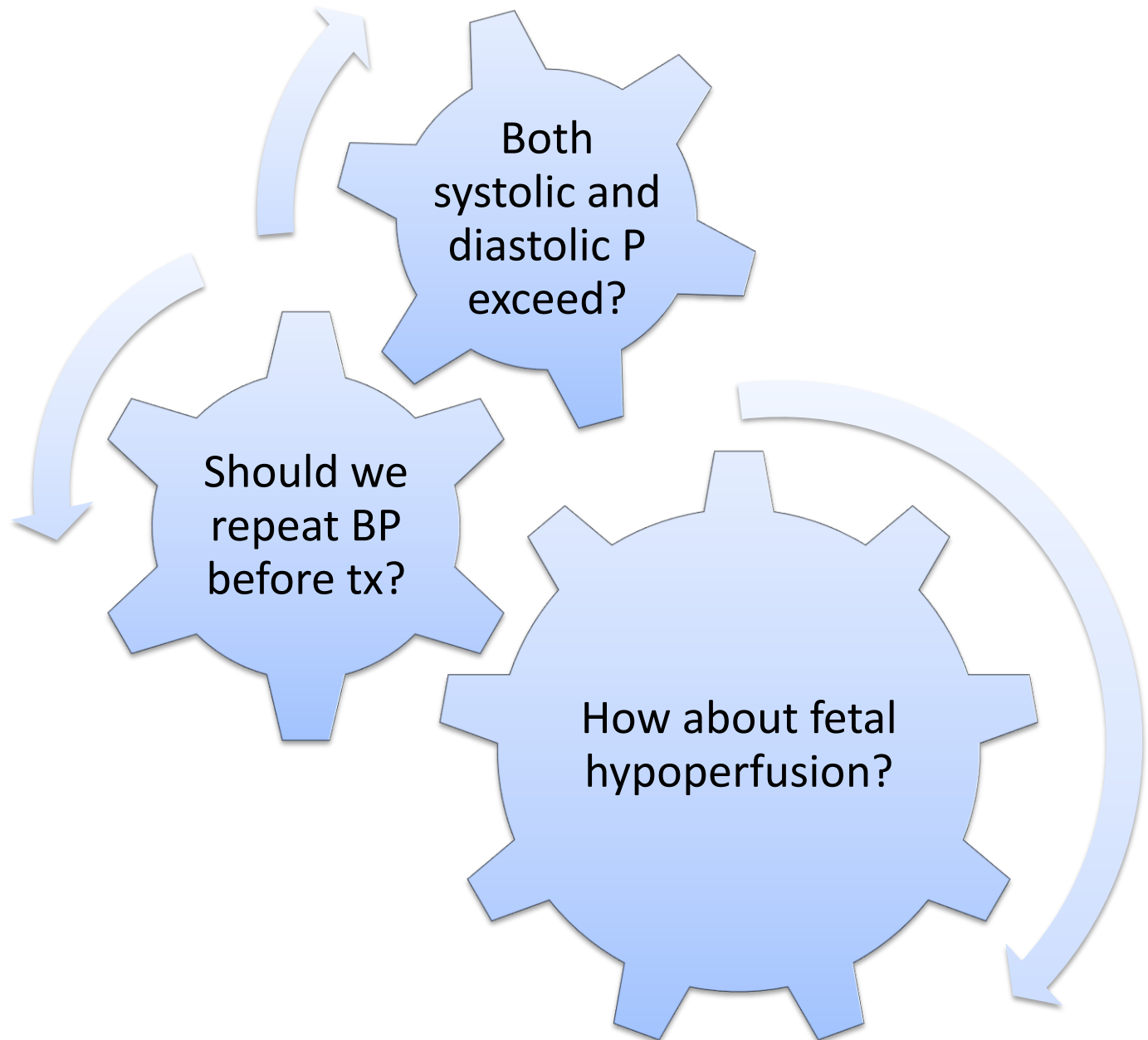


Countries with baseline MMR > 420





1/3 intracranial hemorrhage



- Any hospitalized patient with preeclampsia experiencing;
  - either a systolic BP of 160 or
  - a diastolic pressure of 110 mmHg should receive an intravenous antihypertensive agent within **15 minutes**

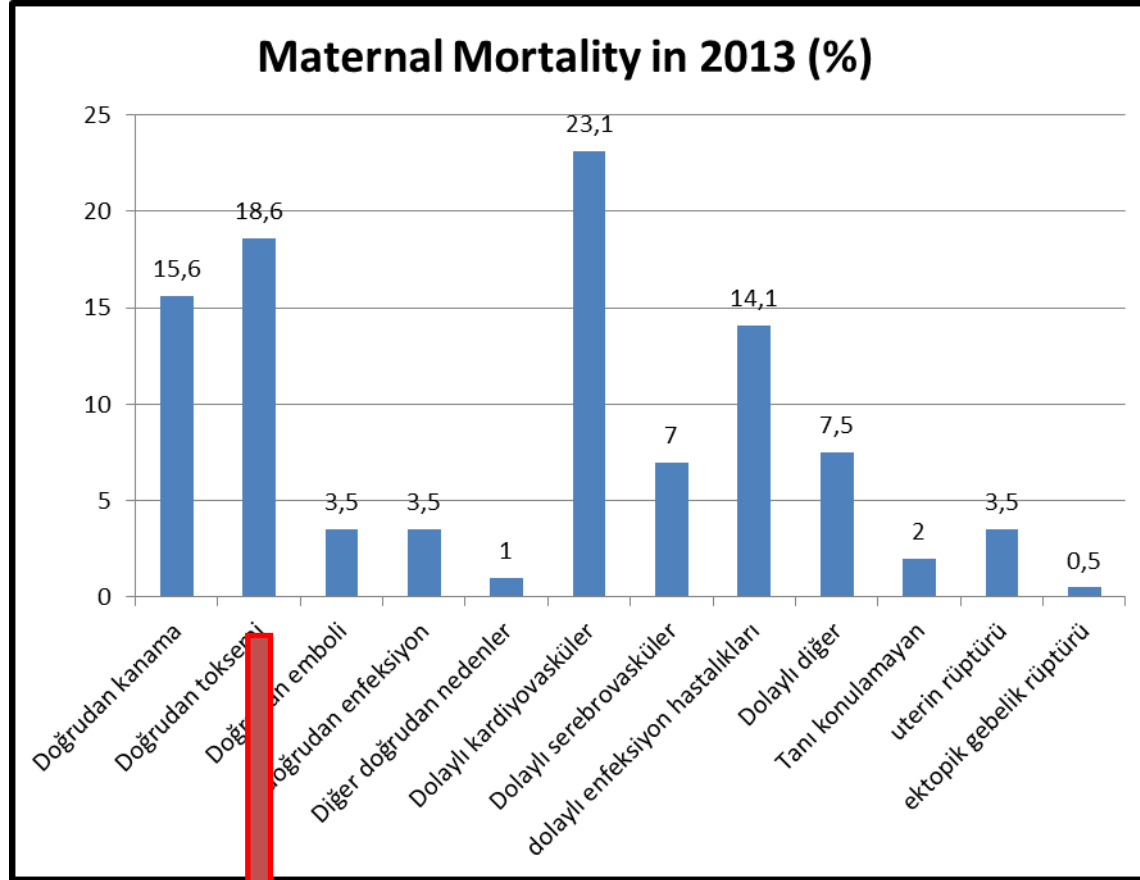


# ANTIHYPERTENSIVE THERAPY ACUTE

- Labetolol
- Hidralazine
- Nifedipine (Ca channel bloker)
  - 10 mg oral/ every 30 min, max 50 mg
- Nitroprussid
  - 0,5-10 mg/kg single dose

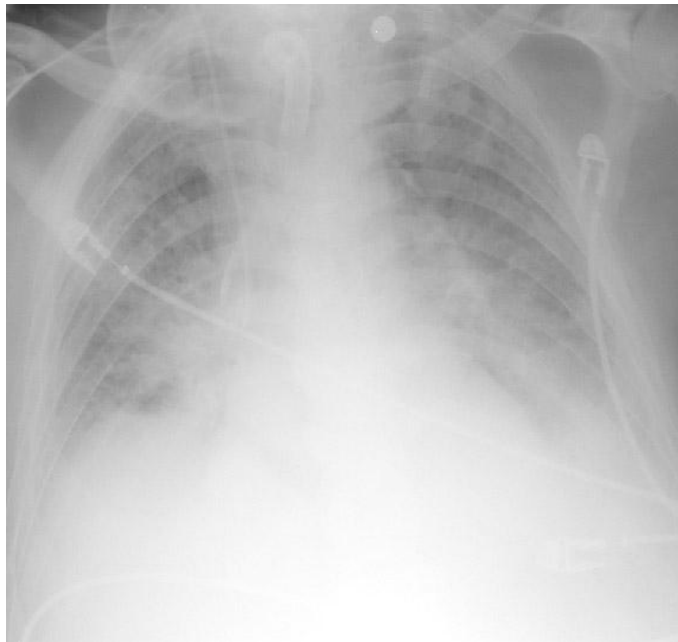






1/10 pulmonary edema

- A patient with preeclampsia reporting shortness of breath should undergo a chest X-ray immediately



Loss of both hemidiaphragms and silouhetting of the heart

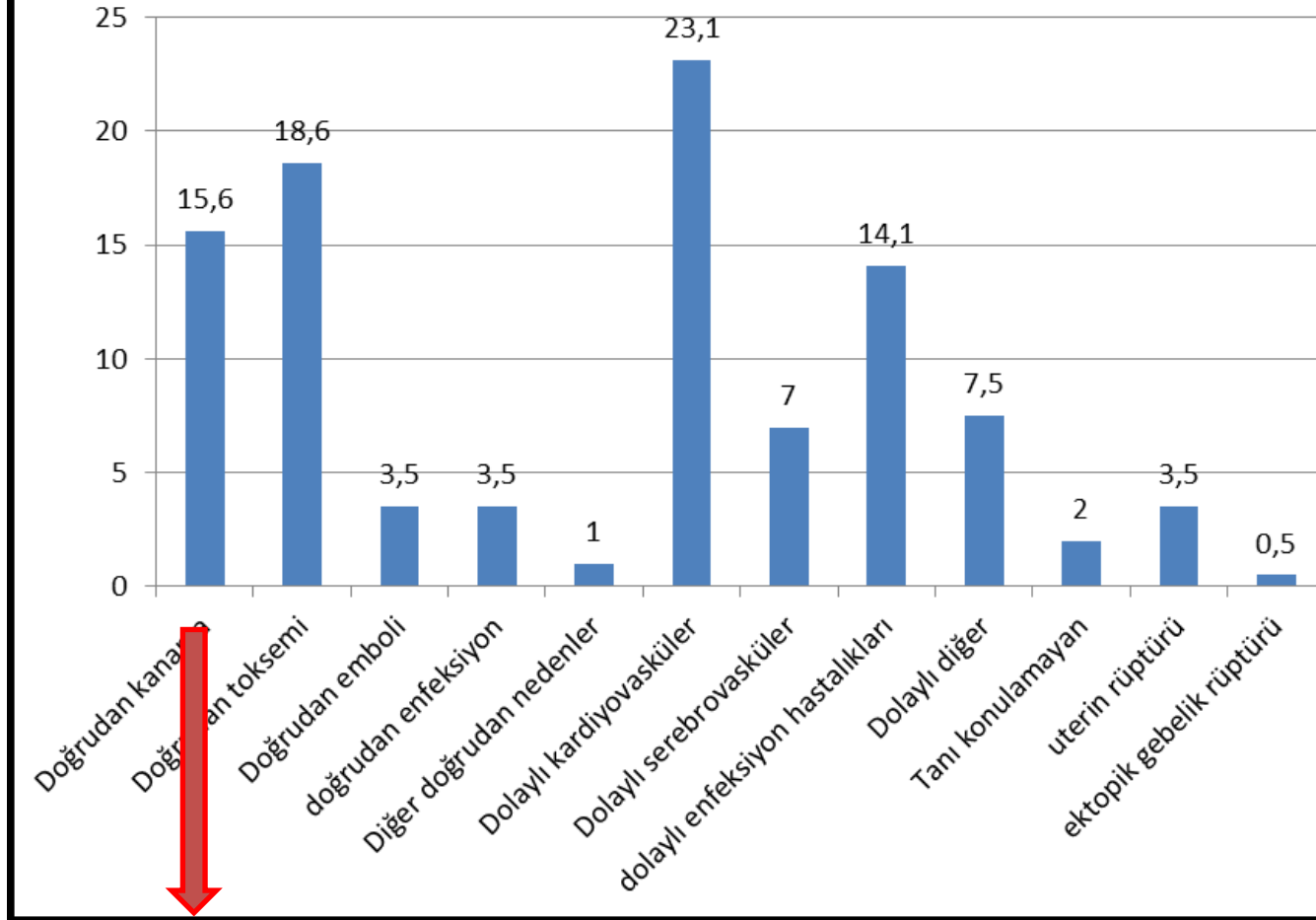
**Max iv fluid 80 ml/h**

**20 gram MgSO<sub>4</sub> + 500 cc RL**

1 g	25 cc/hr
1.5 g	38 cc/hr
2 g	50 cc/hr
2.5 g	63 cc/hr
3 g	75 cc/hr
3.5 g	88 cc/hr
4 g	100cc/hr



## Maternal Mortality in 2013 (%)

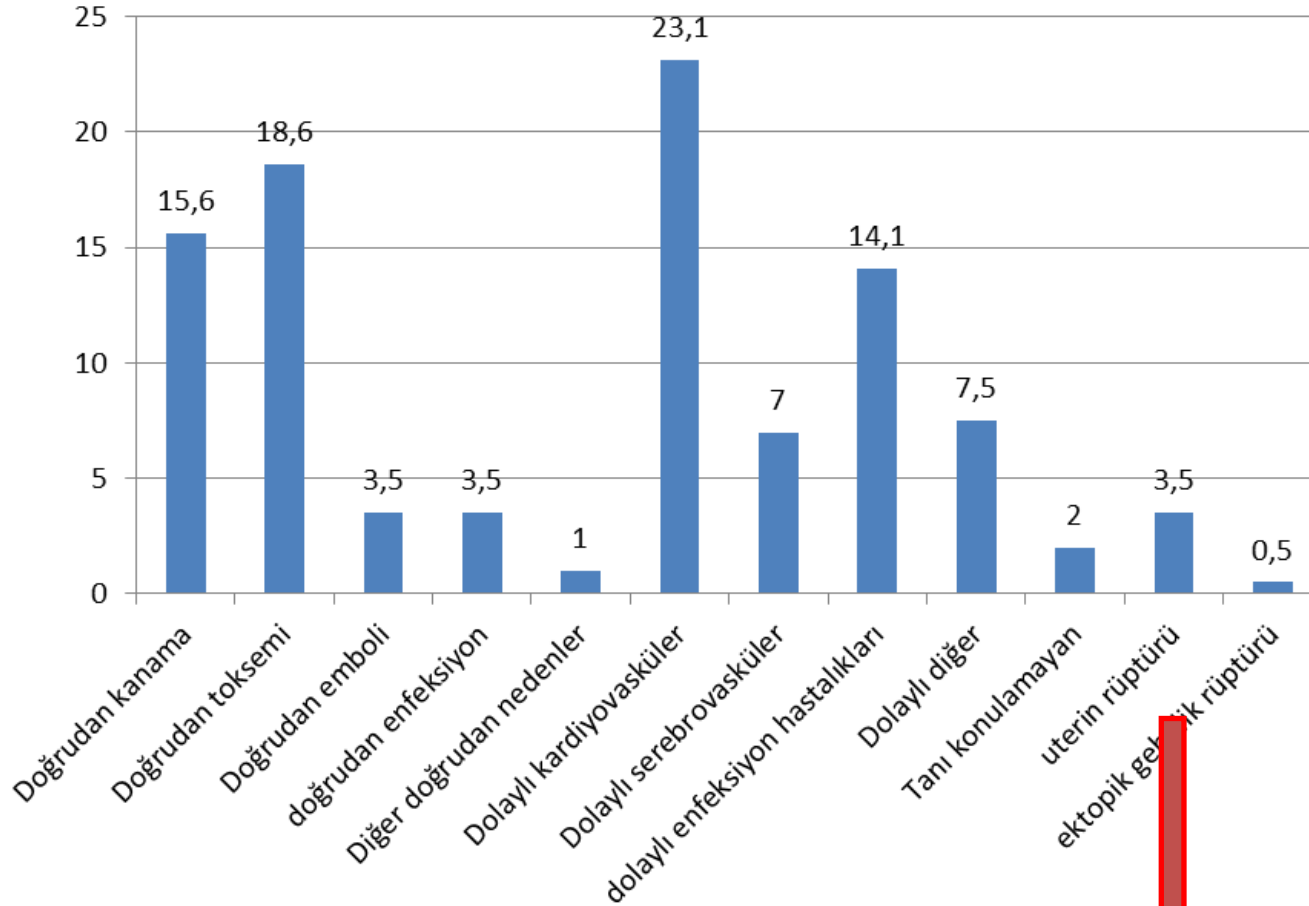


1/6 placental previa + previous C/S

- Any woman with placental previa + one or more C/S should be evaluated and delivered in a tertiary care medical center



## Maternal Mortality in 2013 (%)



Uterine rupture

# Case

- 25 y, 2G 1P 1Y (previous C/S), 25 w
- 5:00 stomachache
- Obstetrician gave Duphalac and sent to emergency department
- 8:00 Cardiac arrest
- Autopsy: Uterine rupture



Previous  
uterine  
surgery

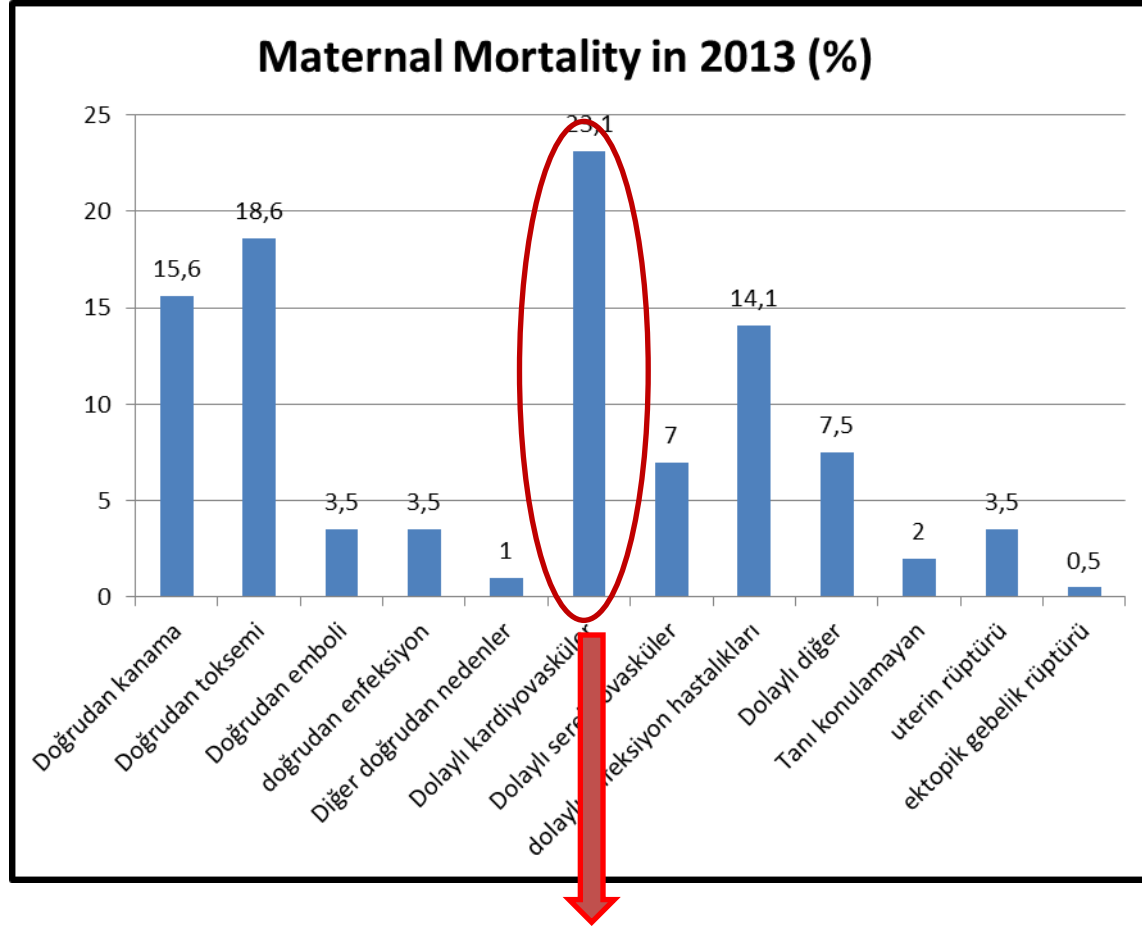


Acute  
abdomen



Uterine  
rupture





2/3 pulmonary embolus

# Case

- 43y, 5G 4P 4Y
- 38 w, breech C/S
- Postop atony, 3U ERT, postop 4<sup>th</sup> day discharged
- Postop 9<sup>th</sup> day dyspnea
- Pulmonary angio: pulmonary embolus

CT pulmonary angiogram in a patient with multiple, bilateral PE





REDUCING THE RISK OF THROMBOSIS AND EMBOLISM DURING  
PREGNANCY AND THE PUERPERIUM



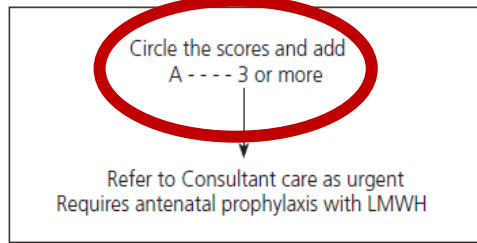
<b>Preexisting risk factors</b>	<b>Score</b>
Previous recurrent VTE	3
Previous VTE-unprovoked/Estrogen related	3
Previous VTE-provoked	2
Family history of VTE (1st degree relative)	1
Known thrombophilia	2
Medical comorbidities (SLE, OHA, proteinuria>3g)	2
Age > 35	1
BMI >40 kg/m <sup>2</sup>	2
Parity >3	1
Gross varicose veins	1

# Obstetric risk factors

Severe preeclampsia	1
Dehydration, hyperemesis, OHSS	1
Multiple pregnancy	1
Emergency C/S	2
Elective C/S	1
Forceps application	1
Prologed labor > 24 h	1
PPH > 1L or transfusion	1

**A. RISK ASSESSMENT AT BOOKING**

Pre-existing Risk Factors	Score
Previous recurrent VTE	3
Previous VTE - unprovoked/estrogen related	3
Previous VTE - provoked	2
Family history of (1st degree relative) VTE	1
Known thrombophilia	2
Medical co-morbidities	2
Age (>35 years)	1
Obesity BMI >40 kg/m <sup>2</sup>	2
Parity >3	1
Gross varicose veins	1

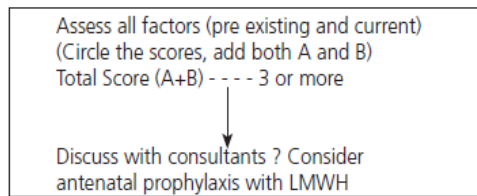


**Assessor:**

Print Name..... Signature..... Designation..... Date:.....

**B. RISK ASSESSMENT AT ANTENATAL ADMISSION**

New Obstetric & Transient Risk Factors	Score
Severe pre-eclampsia	1
Dehydration, hyperemesis	1
Current systemic infection	1
Immobility	1
Long-distance travel (>4 hrs)	1
Surgical procedure in pregnancy	2



**Assessor:**

Print Name..... Signature..... Designation..... Date:.....

**B. RISK ASSESSMENT AT REPEAT AN ADMISSIONS**

**2nd Admission**

New Obstetric & Transient Risk Factors	Score
Severe pre-eclampsia	1
Dehydration, hyperemesis	1
Current systemic infection	1
Immobility	1
Long-distance travel (>4 hrs)	1
Surgical procedure in pregnancy	2

**3rd Admission**

New Obstetric & Transient Risk Factors	Score
Severe pre-eclampsia	1
Dehydration, hyperemesis	1
Current systemic infection	1
Immobility	1
Long-distance travel (>4 hrs)	1
Surgical procedure in pregnancy	2

**Assessor:**

Name..... Signature.....  
Designation..... Date:.....

**Assessor:**

Name..... Signature.....  
Designation..... Date:.....

**4th Admission**

New Obstetric & Transient Risk Factors	Score
Severe pre-eclampsia	1
Dehydration, hyperemesis	1
Current systemic infection	1
Immobility	1
Long-distance travel (>4 hrs)	1
Surgical procedure in pregnancy	2

**5th Admission**

New Obstetric & Transient Risk Factors	Score
Severe pre-eclampsia	1
Dehydration, hyperemesis	1
Current systemic infection	1
Immobility	1
Long-distance travel (>4 hrs)	1
Surgical procedure in pregnancy	2

**Assessor:**

Name..... Signature.....  
Designation..... Date:.....

**Assessor:**

Name..... Signature.....  
Designation..... Date:.....



Risk Factors	Score
Any previous VTE - unprovoked; estrogen related: provoked: recurrent	<b>High Risk</b>
Anyone requiring antenatal LMWH	
Known thrombophilia (as per AN plans)	
Obesity BMI >45 kg/m <sup>2</sup>	

**High Risk**  
6 weeks prophylactic LMWH

- TEDS
- Mobilisation
- Avoidance of Dehydration

Risk Factors	Score
Medical co-morbidities	<b>Intermediate Risk</b>
Caesarean section in labour	
Obesity BMI >40 kg/m <sup>2</sup>	

**Intermediate Risk**  
7 days prophylactic LMWH

- TEDS
- Mobilisation
- Avoidance of Dehydration

Pre-existing Risk Factors	Score
Family history of (1st degree relative) VTE	1
Age (>35 years)	1
Parity >3	1
Gross varicose veins	1
Prolonged hospital admission, Immobility	1
Intrapartum Risk Factors	Score
Elective caesarean section	1
Rotational forceps	1
Prolonged labour (>24 hours)	1
PPH (>1500ml or transfusion)	1
Postpartum Risk Factors	Score
Any surgical procedure in the puerperium	2
Postpartum wound infection	1

**Intermediate Risk**  
Risk score - 2 or more  
7 days prophylactic LMWH

- TEDS
- Mobilisation
- Avoidance of dehydration

**Low Risk**  
Risk score - 1

- TEDS
- Mobilisation
- Avoidance of Dehydration

Risk Score - 0

- Mobilisation
- Avoidance of Dehydration

- All women should be assessed early in antenatal period for risk factors for VTE.


- Women with  $\geq 3$  risk factors should receive antenatal LMWH.

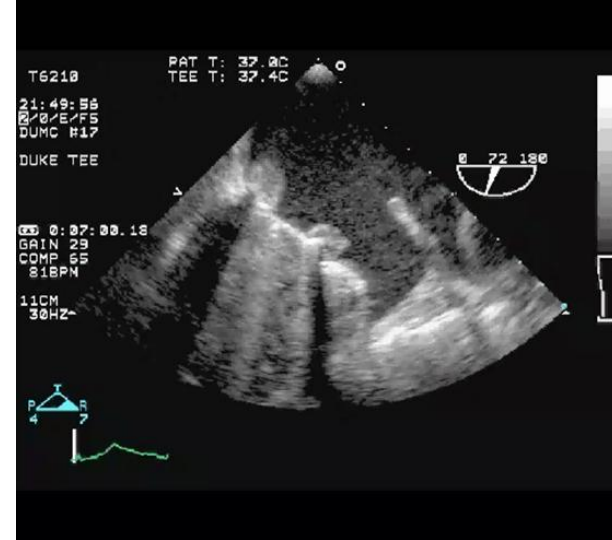


- All women should be assessed after delivery for risk factors for VTE.

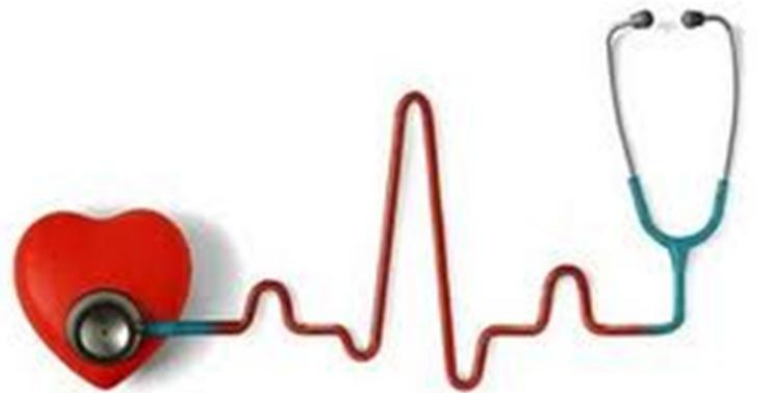
- Women with  $\geq 2$  risk factors should receive LMWH for 7 d.

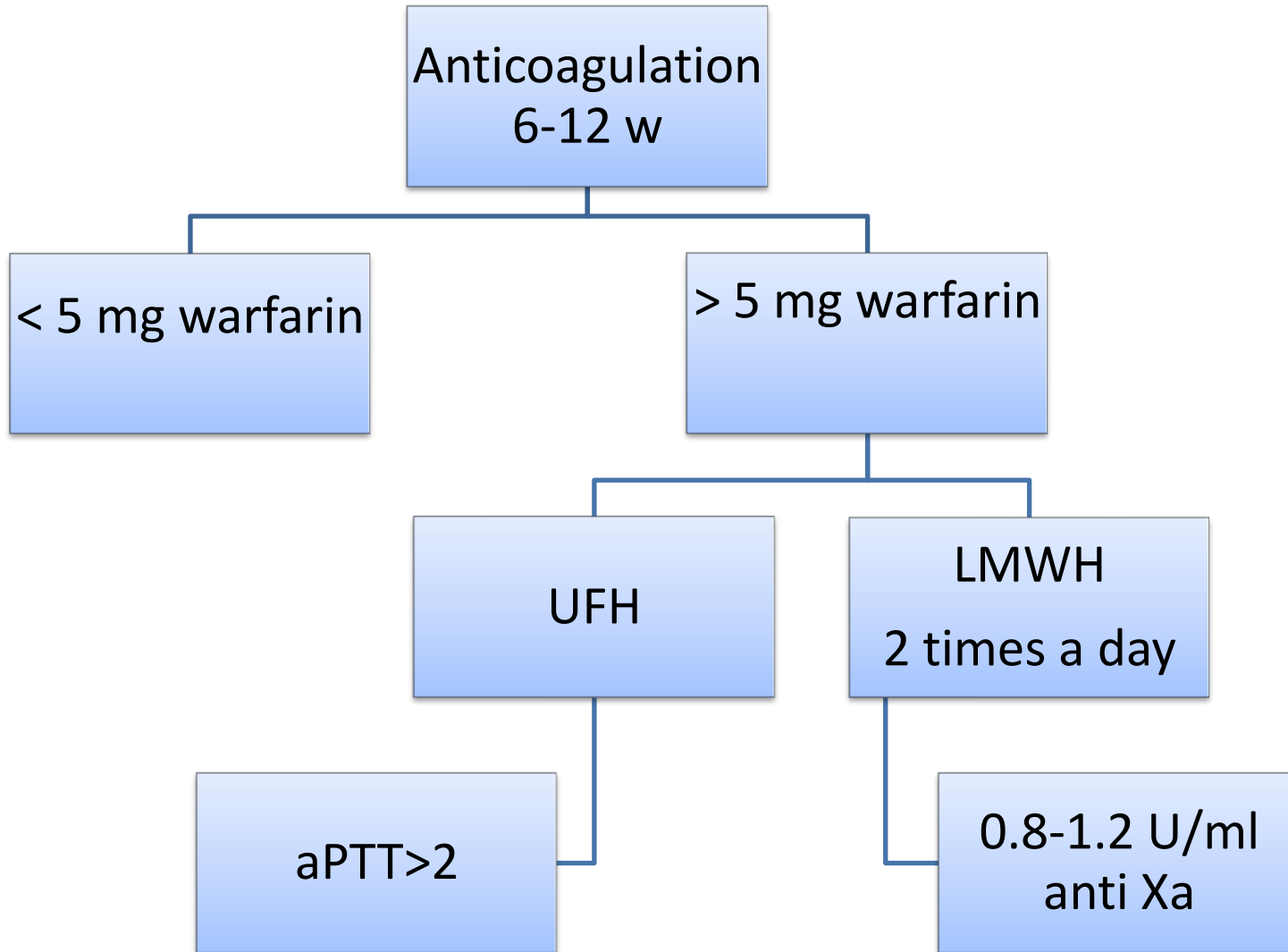
# Case

- 36y, 4G 2P 1A
- MVR, AVR, Echo-N
- 5w- Coumadin was changed with a single dose of LMWH
- 10w-dyspnea  Emergency Dep-Cardiac arrest



- Any patient with identified structural or functional cardiac disease gets a maternal–fetal medicine consultation.
- Hospitalize when you change the regimen





If you can not monitor,  
do not use LMWH

Pregnancy

6-12 w

Warfarin or  
heparin (UFH or  
LMWH)

2-3 trimester  
(till 36 w)

Warfarin

> 36 w

UFH or  
LMWH

# Pregnancy + Fever<sup>F</sup>

- October-April
- $\geq 37.8$  °C
- Cough, sore throat, malaise, diarrhea, headache



CONSULTATION



Osetamivir 75 mg 2X1/d

# THANK YOU



PMC

*Dergimiz JTGGA  
artık Pubmed Central'de...*