Preeclampsia. Eclampsia

Dott.ssa Maria Luisa Amico
Dott. Antonio Claudio Cannizzaro

European Society of
Regional Anaesthesia
& Pain Therapy
ESRA ITALIA

ESRA Italian Chapter

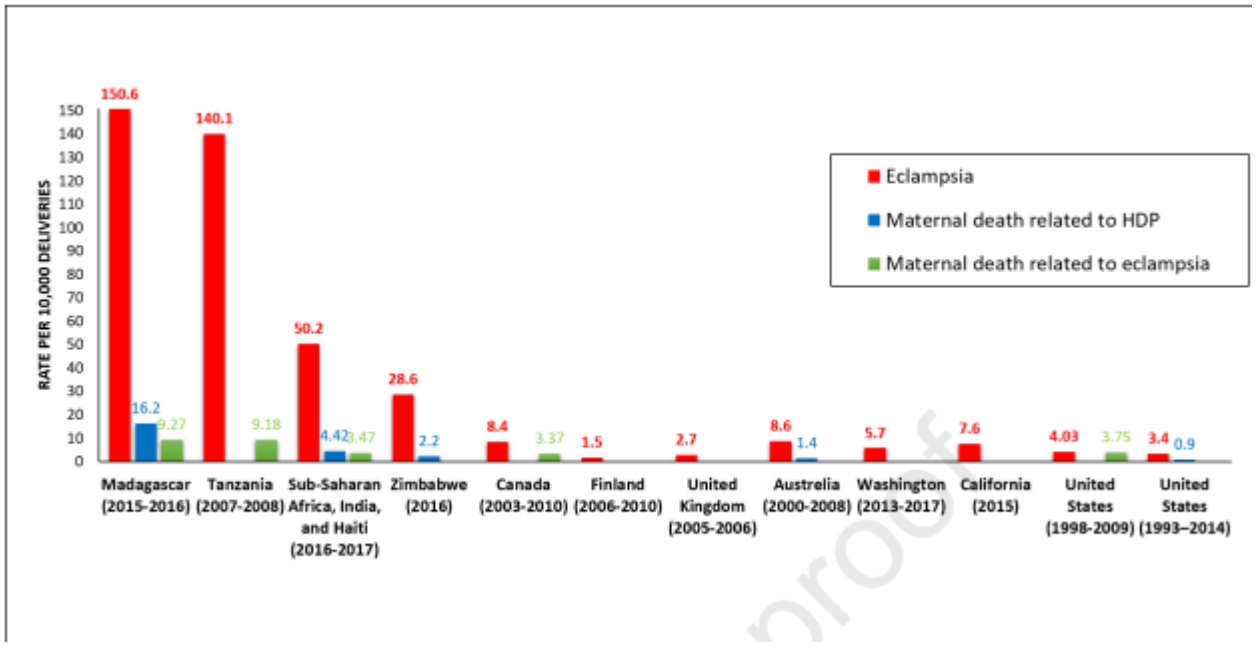
XXVIII
CONGRESSO
NAZIONALE

PRESIDENTE
DEL CONGRESSO
Luciano Calderone

MZ EVENTS

INCIDENCE

- 10% of pregnancies complicated by hypertensive disorder (HDP)
- Eclampsia in 0,8% of women with HDP
- 1,6-10 per 10000 deliveries in developed countries
- About 50-151 per 10000 deliveries in developing countries



Eclampsia in the 21 st century. M. Fishel Bartal et al; AJOG 2020

PREECLAMPSIA

Preeclampsia is defined as hypertension with or without proteinuria or other end-organ effects (thrombocytopenia, kidney insufficiency, impaired liver function with transaminases greater than twice normal, pulmonary edema, and new onset headache unresponsive to medications or visual symptoms, and or FGR)

ACOG 2019

ECLAMPSIA

The occurrence of one or more generalized, tonic-clonic convulsions unrelated to other medical conditions (in women with hypertensive disorder in pregnancy)

Eclampsia in the 21 st century. M. Fishel Bartal et al; AJOG 2020

…antepartum, intrapartum or postpartum

Headache	50-75%
Visual disturbance	20-30%
Right upper quadrant or epigastric pain	15-20%

Fetal manifestations:

Bradycardia during and immediatly after an eclamptic seizure
Compensatory tachycardia and loss of variability

Adverse outcomes

- Placental abruptio
- HELLP
- Acute and renal failure
- Stroke
- Hepatic rupture

H: hemolysis
EL: elevate liver enzyme
LP: low platelets count

ECLAMPSIA

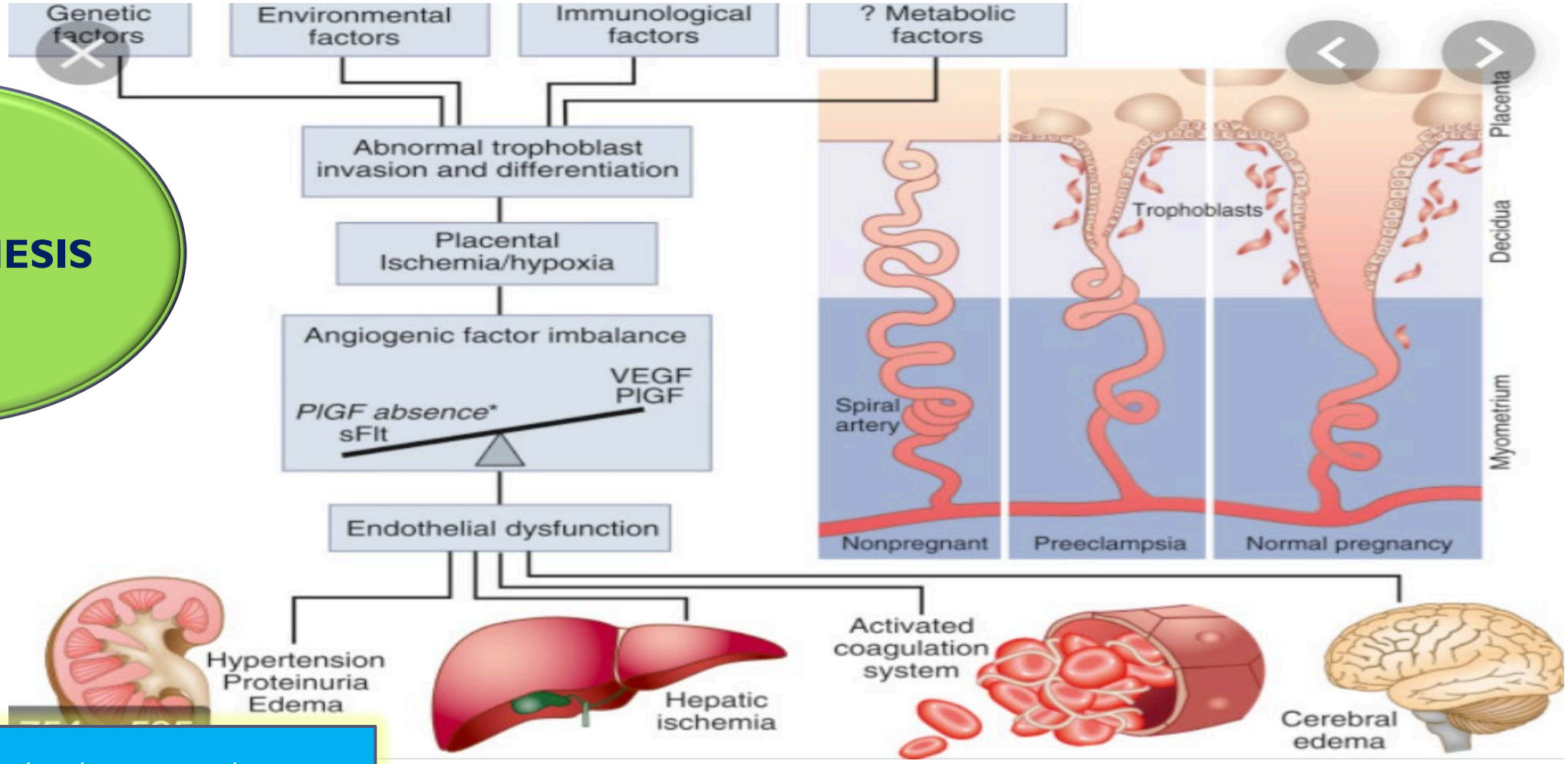
DIFFERENTIAL DIAGNOSIS

Table 1: Differential diagnosis of seizure during pregnancy or postpartum

Potential causes of seizures in pregnancy and post-partum
Seizure disorder
Pregnancy related ○ Eclampsia ○ Thrombotic thrombocytopenic purpura ○ Amniotic fluid emboli
Neurovascular ○ Intracranial hemorrhage ○ Subarachnoid hemorrhage (ruptured aneurysm or malformation) ○ Arterial embolism or thrombosis ○ Cerebral venous thrombosis ○ Angiomas ○ Space occupying lesion (benign, neoplastic, primary, metastatic) ○ Posterior reversible encephalopathy syndrome (PRES) ○ Congenital brain defects
Metabolic ○ Liver/renal failure ○ Hypoglycemia ○ Hyponatremia ○ Hyperosmolar states (hyperosmolar nonketotic hyperglycemia) ○ Hypocalcaemia
Autoimmune ○ Systemic lupus erythematosus ○ Antiphospholipid syndrome
Infectious encephalitis/meningitis: bacterial, viral, parasitic, tuberculosis
Drug/substance overdose/withdrawal {i.e antipsychotics, tricyclic antidepressants, salicylate overdose, withdrawal from alcohol, barbiturates, benzodiazepines, illicit drug use such as cocaine, methylenedioxymethamphetamine (MDMA)}
Trauma
Psychogenic nonepileptic seizures (pseudoseizures)

Eclampsia in the 21 st century. M. Fishel Bartal et al; AJOG 2020

PATHOGENESIS

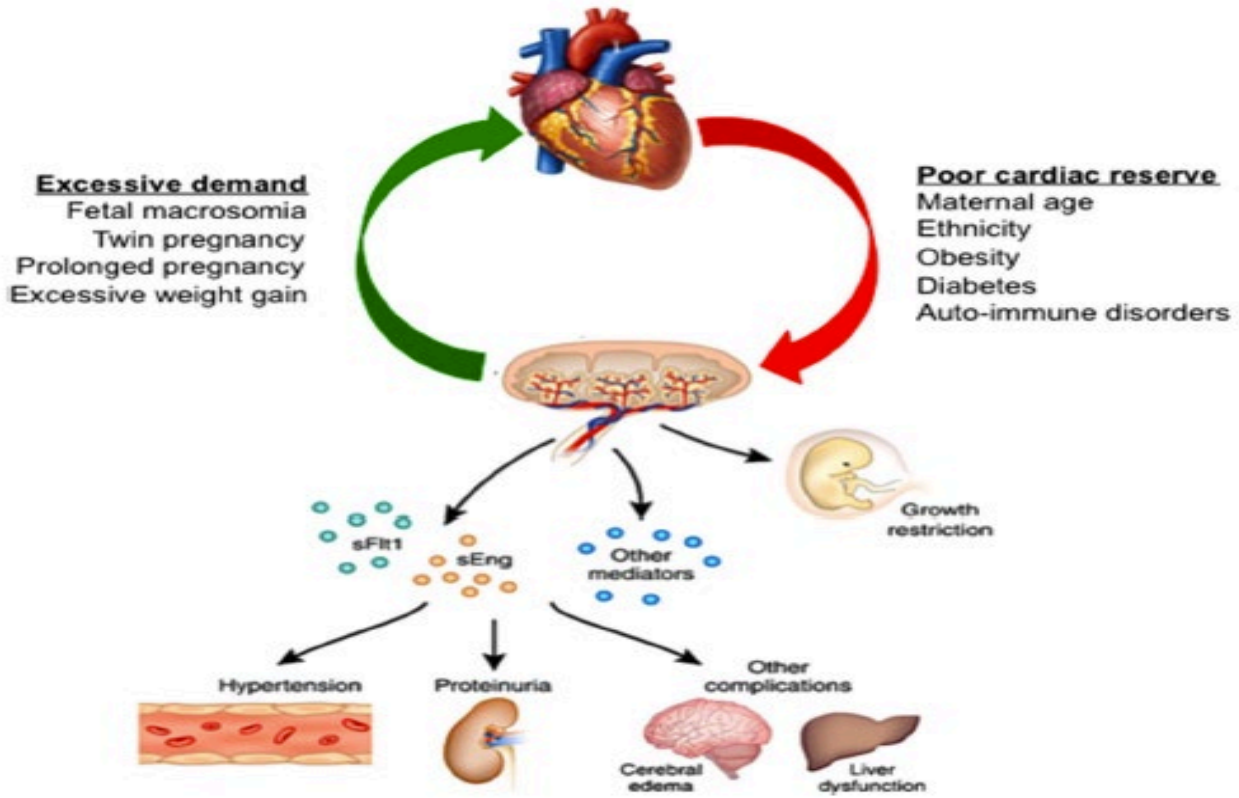


Several hypotheses… none has been proved

ARTICLE IN PRESS
JID: TCM [m5G;June 5, 2018;11:43]
Trends in Cardiovascular Medicine 000 (2018) 1–9
Contents lists available at ScienceDirect
Trends in Cardiovascular Medicine
journal homepage: www.elsevier.com/locate/tcm

Preeclampsia and the cardiovascular system: An update☆

Helen Perry[a,b], Asma Khalil[a,b], Basky Thilaganathan[a,b,*]



THE JOURNAL OF MATERNAL-FETAL & NEONATAL MEDICINE
https://doi.org/10.1080/14767058.2019.1695771
Taylor & Francis
Taylor & Francis Group

MISCELLANY

Check for updates

Hemodynamic guided treatment of hypertensive disorders in pregnancy: is it time to change our mind?

Barbara Vasapollo[a], Gian Paolo Novelli[b] and Herbert Valensise[a,c]

[a]Division of Obstetrics and Gynecology, Policlinico Casilino, Rome, Italy; [b]Fondazione Policlinico, Tor Vergata University, Rome, Italy; [c]Department of Surgery, Tor Vergata University, Rome, Italy

Table 1. Proposal of the drug choice based on maternal hemodynamic features.

Parameter	High	Low
Maternal heart rate	>90 bm Alpha and Beta Blockers (alpha methyldopa, Labetalol), calcium channel blockers (Amlodipine but not Nifedipine)	<70 bm Calcium channel blockers (Nifedipine), NO donors[a]+ fluids
Cardiac output	> 8 L/min Alpha and Beta Blockers (alpha methyldopa, Labetalol)	<5 L/min Calcium channel blockers (Nifedipine), NO donors[a]+ fluids
Peripheral vascular resistance	>1400 dyne s.s.cm^{-5} Calcium channel blockers (Nifedipine), NO donors[a]+ fluids	<900 dyne s.s.cm^{-5} Alpha and Beta Blockers (alpha methyldopa, Labetalol)

[a]Nitric oxide (NO) donors have been used in the past but there is no clear indication on their use, although our group found a positive effect when associated to fluids in gestational hypertensive patients and fetal growth restriction [5,6].

MANAGEMENT

ACUTE CARE

- **Prevent maternal injury**
- **Venous access**
- **Airway patency**
- **Oxygenation**

STABILIZE MATERNAL CONDICTION

- **Blood pressure control**
- **Prevent convultions**

DELIVERY

- **After stabilize maternal condiction**
- **based on gestational age, Bishop score, fetal and maternal condition**

:

Cornerstone of treatment

→ **blood pressure control (limit cardiovascular and cerebrovascular morbidity)**

→ **Magnesium therapy (prevention of eclampsia)**

BLOOD PRESSURE CONTROL

Time *Min*	LABETALOL IV (mg)	HYDRALAZINE IV (mg)	NIFEDIPINE Oral (mg)
0	20	5-10	10
10	SBP ≥ 160 or DBP ≥ 110 40	Check Blood pressure	Check Blood pressure
20	SBP ≥ 160 or DBP ≥ 110 80	SBP ≥ 160 or DBP ≥ 110 10	SBP ≥ 160 or DBP ≥ 110 20
30	SBP ≥ 160 or DBP ≥ 110 10, Hydralazine	Check Blood pressure	Check Blood pressure
40	Check Blood pressure	SBP ≥ 160 or DBP ≥ 110 40, Labetalol	SBP ≥ 160 or DBP ≥ 110 20
50	SBP ≥ 160 or DBP ≥ 110 Consult	SBP ≥ 160 or DBP ≥ 110 Consult	SBP ≥ 160 or DBP ≥ 110 20, Labetalol Consult

Eclampsia in the 21 st century. M. Fishel Bartal et al; AJOG 2020

TREATMENT OF CONVULSIONS

MAGNESIUM SULFATE

- 4-6 gr over 15-20 min
- Mantainence infusion 2 gr/h (range 2-6gr/h)
- Second bolus of 2 gr over 3-5 min (10% second convulsions)
- Lorazepam 4 mg iv over 3-5 min

Adverse effects

Oliguria, loss of deep tendon reflexes, respiratory depression, cardiac arrest

Adverse effects

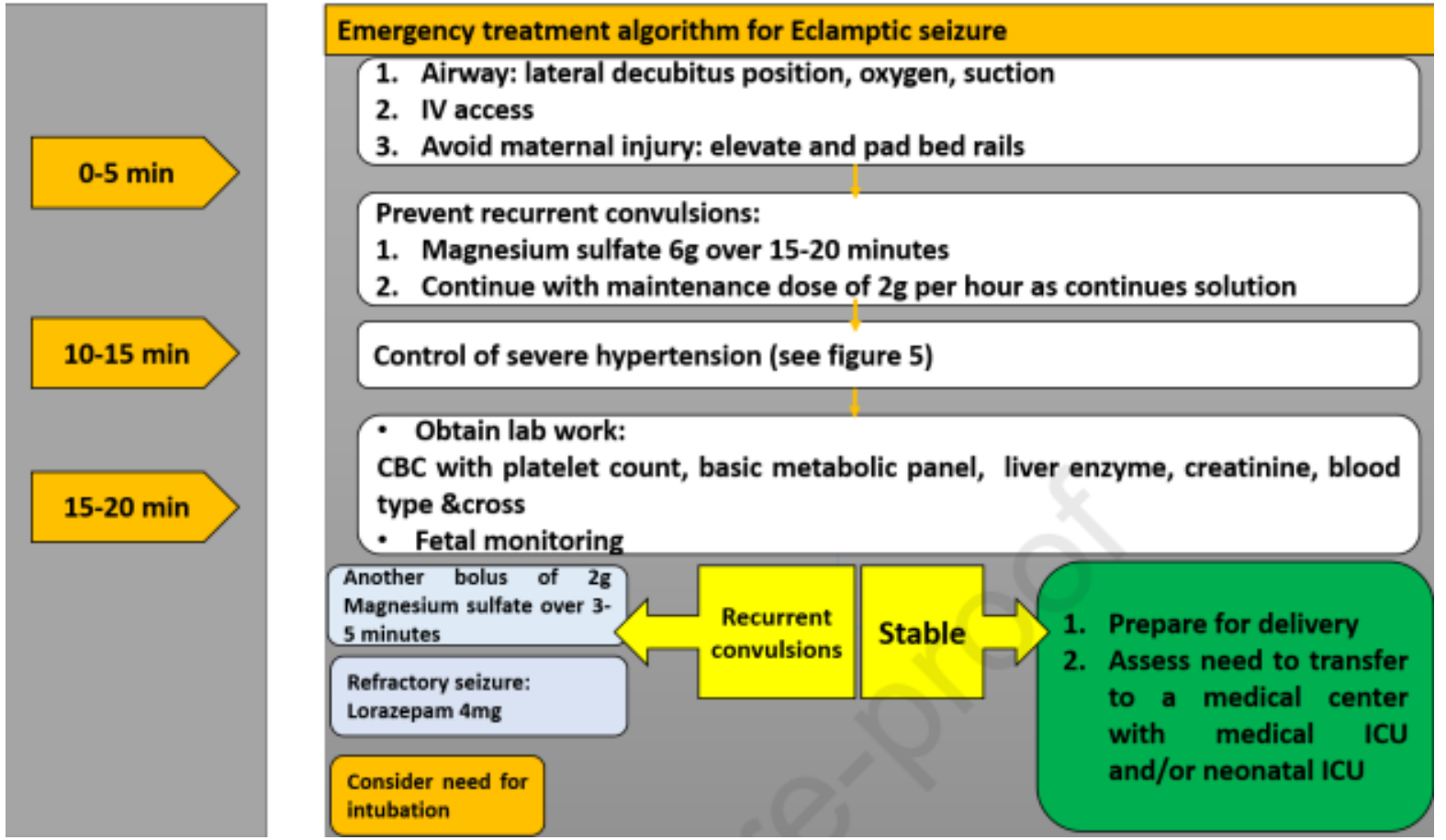
Loss of deep reflexes: stop infusion

Oliguria (less than 30 ml/h for more of 4 hours): halve the maintenance dose (1 g/h)

Respiratory depression: stop infusion, calcium gluconate 10% solution 10 ml iv over 3 min, oxygenation…may require intubation

Cardiac arrest: cardiopulmonary resuscitation

MAGNESIUM LEVELS EVERY 4-6 HOURS



Eclampsia in the 21 st century. M. Fishel Bartal et al; AJOG 2020

PALERMO 5-7 Ottobre

XXVIII CONGRESSO NAZIONALE

European Society of Regional Anaesthesia & Pain Therapy

ESRA ITALIA

…thanks!!