

Obat-obat Emergensi

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Obat-obat Emergensi

I. Uterotonik

II. Magnesium Sulfat

III. Inotropik, Vasokonstriktor dan Antihipertensi

I. Uterotonik

1. Oksitosin

- meningkatkan kekuatan & frekuensi kontraksi ritmik uterus

Indikasi : - Induksi persalinan

- Pengendalian perdarahan post partum

Penyimpanan : 2 – 8° C

Cara Pemberian : im, iv

Onset : IV hampir langsung
IM 3-5 mnt

Durasi : IV 20 mnt – 1 jam
IM 2 – 3 jam

Efek samping :

- Aritmia, hipotensi, takikardia
- Mual, muntah
- Reaksi anafilaksis
- Hypertonisitas, spasme, ruptur uterus
- Janin : bradikardia, aritmia
- Retensi air, hiponatremia, afibrinogenemia

Kontra indikasi : DKP, plasenta previa, hipertoni uterus

2. Methergine

Bekerja langsung pada otot polos uterus :

- meningkatkan tonus, kecepatan dan amplitudo kontraksi uterus

↓
Uterotonik tetanik

Indikasi : atonia uteri

Penyimpanan: suhu < 25° C lindungi dari cahaya

Cara Pemberian : IV, IM, PO

Onset : IV langsung

IM 2 – 5 mnt

PO 5 – 15 mnt

Durasi : IV 45 mnt, IM/PO 4-6 jam

Efek samping :

- hipertensi, nyeri dada
- Dispne
- halusinasi, pusing, tinitus, kejang
- Diare, nausea, vomitus.
- hematuria

Kontra Indikasi :

- hipertensi berat, preeklamsi/ eklamsi
- CVA

II. Magnesium Sulfat

Efek :

- Mengurangi pelepasan asetilkolin
- Mengurangi kepekaan akhiran motorik terhadap asetilkolin
- Mengurangi amplitudo potensial akhiran motorik
- Depresi SSp
- Depresi pernapasan
- Memperlambat impuls nodus Sinatrial
- Vasodilatasi

Pada kehamilan :

- penurunan tahanan vaskuler uterus shg aliran darah uteroplasental meningkat

Indikasi:

Pencegahan & mengontrol kejang pada :

- ◆Eklamsi
- ◆Epilepsi
- ◆Nefritis dan hipomagnesemia

Terapi pada :

- ◆ VT torsades de pointes dan aritmia krn hipokalemia

Penyimpanan: suhu kamar 15- 40° C lindungi dari pembekuan

Cara Pemberian : IV, IM

Onset : IV langsung

IM < 1 jam

Durasi : IV 30 mnt, IM 3-4 jam

Efek samping :

- Hipotensi, blok jantung
- Paralisis pernapasan
- Kelumpuhan flasid, depresi refleks (refleks patella – tanda klinis awal intoksikasi magnesium)

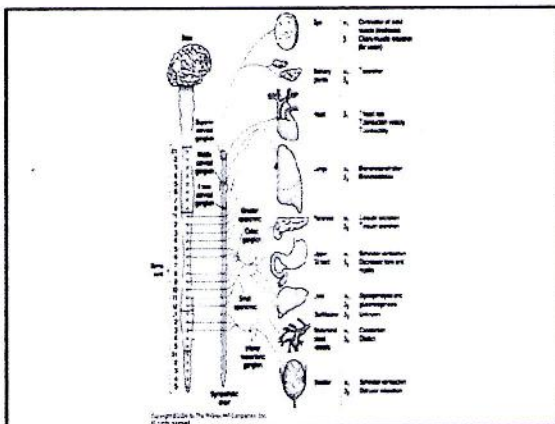
Jika kadar MgSO₄ serum > 10-12 Meq/L. refleks tendon –

Kontra indikasi : blok jantung atau kerusakan miokard luas

Jika terjadi hipermagnesemia yang mengancam kehidupan

Tx : Ca gluconas IV 5- 10 mEq
(10 – 20 cc Ca glukonas10%)

III. Inotropik , Vasokonstriktor dan Antihipertensi



Receptor selectivity of Adrenergic Agonists

Group	1	2	3a	3b	DA ₁	DA ₂
From clasp net	***					0
Multi-hole	*	*	0	0	0	0
Clasp net	***	*	0	0	0	0
From perforated net		*	0	0	0	0
Epinephrine ²	**	***	***	***	0	0
Epinephrine ¹						0
From light net	0	0	0	0	***	0
From multi-hole net	**	***	*	0	0	0
Epinephrine ¹	0	***	***		***	0
From pin net	0			***		***
Endothelium	0	0	***	*	0	0
From multi-hole				***		0

² The primary mode of action of efedrine is indirect stimulation.

Effects of adrenergic Agonists on organ Systems

[illegible][illegible]

Antihipertensi

Receptor Selectivity of Adrenergic Antagonists

Table 12-0. Receptor Selectivity of Adrenergic Antagonists.¹

Drug	α_1	α_2	β_1	β_2
Prazosin	-	0	0	0
Phenylephrine	-	-	0	0
Phentolamine	-	-	0	0
Labetalol ²	-	0	-	-
Metoprolol	0	0	-	-
Esmolol	0	0	-	-
Propranolol	0	0	-	-

¹ 0, no effect; -, antagonist effect (mild, moderate, marked)

² Labetalol may also have some β_2 -agonist activity.

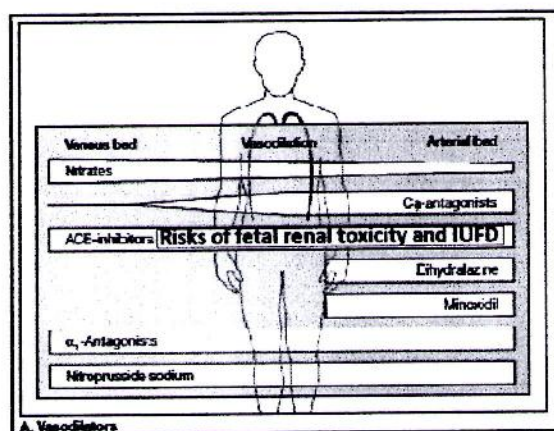
Pharmacology of β Blockers

	Selectivity for β_1 -Receptors	ISA	α_2 -Blockade	Hepatic Metabolism t _{1/2}
Atenolol	+	0	0	6-7
Esmolol	+	0	0	<1h
Labetalol	0	+	+	4
Metoprolol	+	0	0	3-4
Propranolol	0	0	+	4-6

ISA, intrinsic sympathomimetic activity; +, mild effect; 0, no effect.

Methyldopa

- ◆ The most widely used drugs for the treatment of hypertension in pregnancy.
- ◆ Centrally acting α_2 -adrenergic agonist prodrug
- ◆ BP control is gradual
- ◆ It is not thought to be teratogenic



Ace-Inhibitor

(Contraindication in Pregnancy)

cardiac defects, fetopathy, oligohydramnios, growth restriction, renal agenesis and neonatal anuric renal failure, which may be fatal

Intravenous Drugs for Hypertensive Emergencies Available in Indonesia

Vasodilators

- Clonidine
- Nitroglycerin
- Sodium Nitroprusside

Ca-Antagonist

- Nicardipine Hydrochloride
- Diltiazem Hydrochloride

COMMONLY USED DRUG IN HYPERTENSIVE EMERGENCY

CLONIDINE I.V.

- Reduce peripheral sympathetic tone by central stimulation of α_2 - receptor.
- Unpredictable onset of action.
- Adverse effect : sedation, dry mouth, constipation and a tendency to a overshoot or rebound hypertension on withdrawn.

COMMONLY USED DRUG IN HYPERTENSIVE EMERGENCY

NITROGLYCERIN I.V.

- Strong vasodilator (arterial- and veno-dilator) with rapid onset and duration of action.
- Adverse effect : headache, tachycardia, nausea, vomiting
- Caution in coronary artery disease and low SBP
- It may increase ICP in anesthetized normotensive patients.

COMMONLY USED DRUG IN HYPERTENSIVE EMERGENCY

SODIUM NITROPRUSSIDE I.V.

- Rapid in onset and requires a constant intravenous infusion.
- Increased intra cranial pressure, hepatic failure, severe renal impairment, and hypothyroidism.
- In renal or hepatic insufficiency it cause cyanide toxicity and used only in those patients with MAP >70 mm Hg
- In a non-anesthetized patient, it can decrease CBF and increase ICP.

COMMONLY USED DRUG IN HYPERTENSIVE EMERGENCY

NIFEDIPINE SUBLINGUAL

- JNC VI and FDA does not recommend the use of sublingual nifedipine for the management of hypertensive crisis should be abandoned in daily practice.
- Serious adverse reaction : reflex tachycardia, cerebrovascular ischemia, stroke and death.
- Rapid unpredictable fall in blood pressure and may precipitate ischemic events.

Nifedipine is not prescribed if you are receiving magnesium sulfate therapy. The combination of these drugs may cause excessively low blood pressures and may alter neuromuscular activity. Using nifedipine sublingually-allowing it to dissolve under your tongue-is also not recommended as it can cause blood pressure levels to fluctuate unpredictably

COMMONLY USED DRUG IN HYPERTENSIVE EMERGENCY

NICARDIPINE I.V

- Useful for hypertensive emergency and urgency.
- Acts as dihydropyridine calcium channel blockers.
- Dose-dependent :
 - Predictable onset of action
 - Rapidly reduced BP.
 - No rebound on withdrawn
- Adverse effect : tachycardia, hypotension and headache.
- Contraindication to patient with elevated ICP at the acute stage of cerebral stroke.

**COMMONLY USED DRUG IN
HYPERTENSIVE EMERGENCY****DILTIAZEM I.V. (Injection)**

- Useful for hypertensive emergency and urgency.
- Acts as Non-dihydropyridine calcium channel blockers.
- Dose-dependent :
 - Predictable onset of action
 - Rapidly reduced BP.
 - No rebound on withdrawn
- Adverse effect : bradycardia, hypotension, headache, flushing.
- Has antischemic and antiarrhythmic effect (class-IV)

DILTIAZEM Injection
Dose Flow Chart

Intravenous bolus injection
0.2 mg / kgBW



Intravenous drip infusion
(5-15 ug / kgBW / minute)

10-20 % MBP reduction
from baseline

↓ Stable BP

Switch to oral Diltiazem CD 200

