

Opioidi u terapiji bola

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Akutna bol, Tuzla 29.06.2019

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KLASIFIKACIJA OPIOIDA

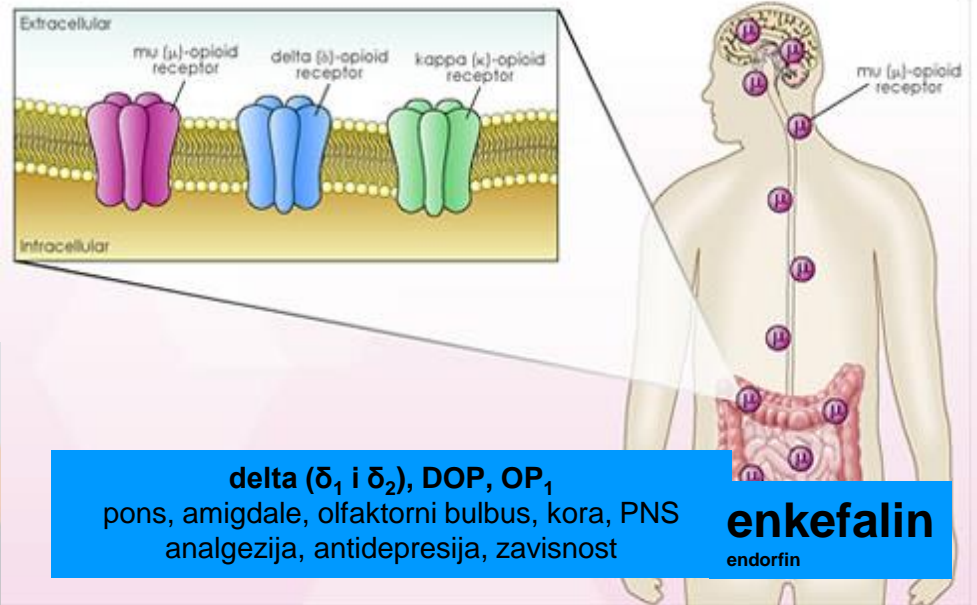
Prirodni	Polusintetski	Sintetski
<p><i>Morfin</i> <i>Codein</i> <i>Papaverine</i></p>  	<p><i>Heroin</i> <i>Hidromorfin</i> <i>Hidrokodein</i> <i>Buprenorfin</i></p> 	<p><i>Butorfanol</i> <i>Tramadol</i> <i>Metadon</i> <i>Pentazocin</i> <i>Meperidin</i> <i>Fentanyl</i> <i>Sufentanil</i> <i>Alfentanil</i></p>  

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Receptori spregnuti sa proteinom G
40% homologni receptorima za somatostatin

Receptori za endogene opioide:
Endorfin, dinorfin, enkefalin,
endomorfin, nociceptin



delta (δ_1 i δ_2), DOP, OP₁
pons, amigdale, olfaktorni bulbus, kora, PNS
analgezija, antidepresija, zavisnost

enkefalin
endorfin

kapa ($\kappa_1, \kappa_2, \kappa_3$), KOP, OP₂
hipotalamus, periakvaduktna siva masa
analgezija, sedacija, disforija, mioza

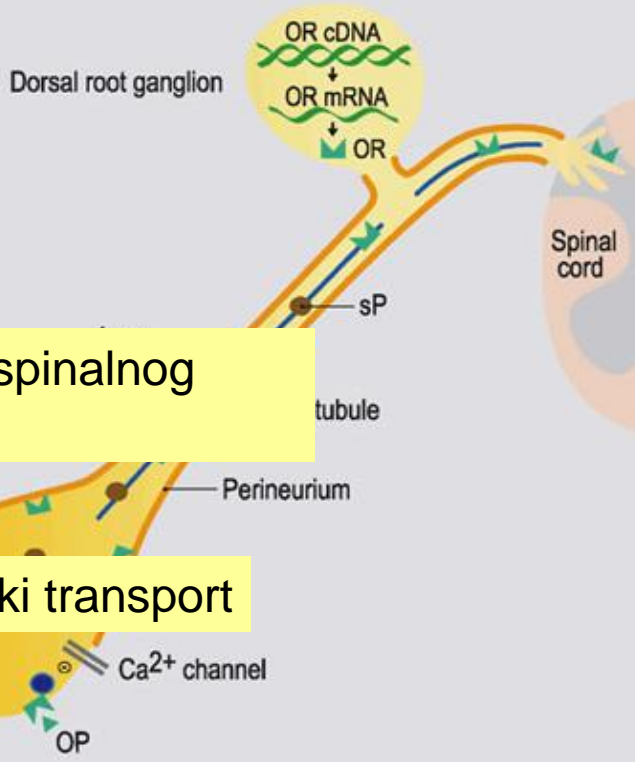
dinorfin

mi (μ_1, μ_2, μ_3), MOP, OP₃
MS, MO, kora, talamus, periakvaduktna siva
masa, PNS, GIT
 μ_1 analgezija, zavisnost
 μ_2 euforija, zavisnost, mioza
 μ_3 nepoznata

morfin
 β endorfin
endomorfin
enkefalin
dinorfin

receptori za nociceptin (ORL₁), NOP, OP₄
kora, hipotalamus, hipokampus,
amigdale, MS,
anksioznost, depresija, apetit...

**Nociceptin
(orphanin FQ)**



**sinteza u spinalnog
gangliji**

aksonski transport

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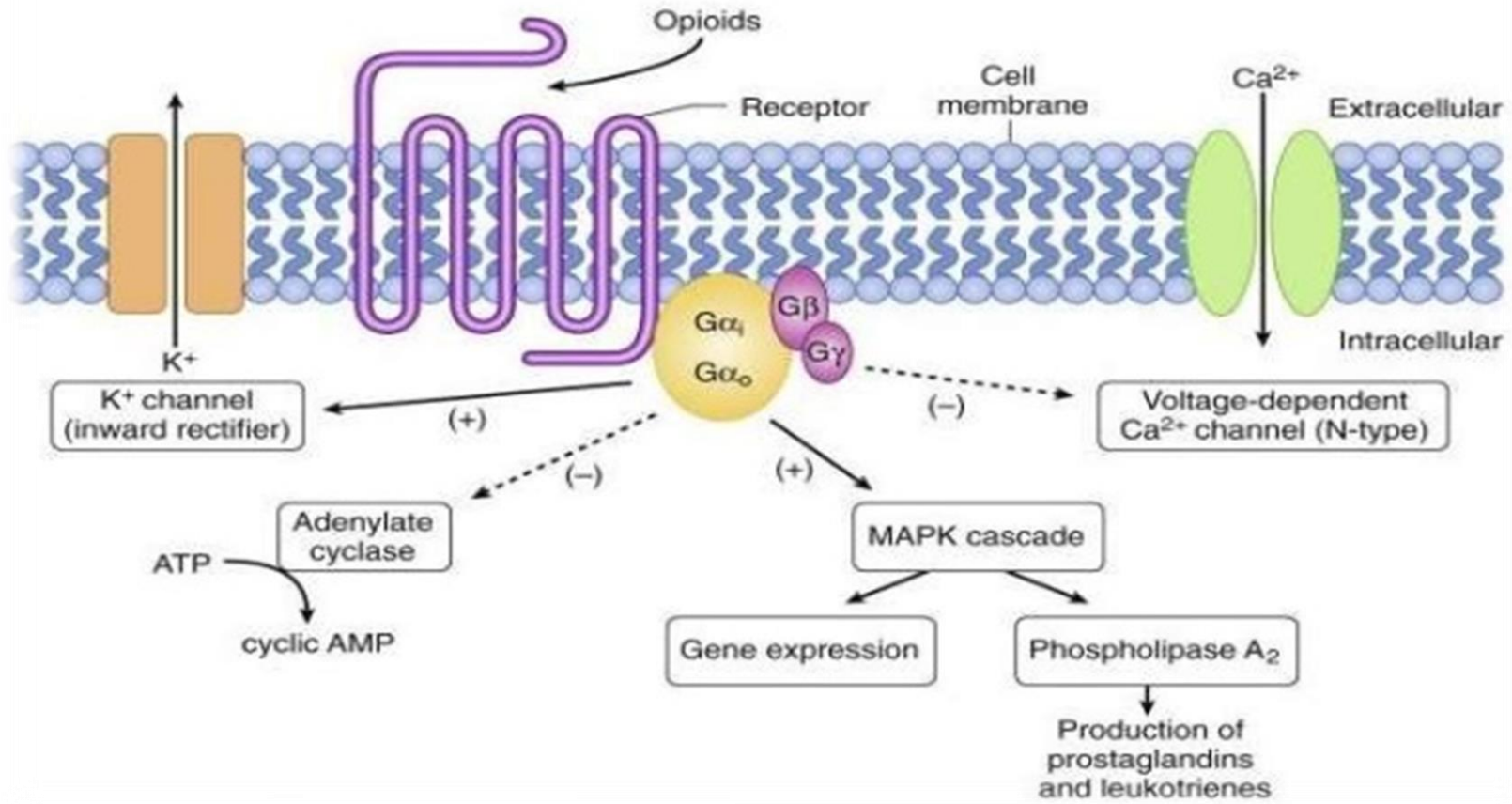
Gi/Go

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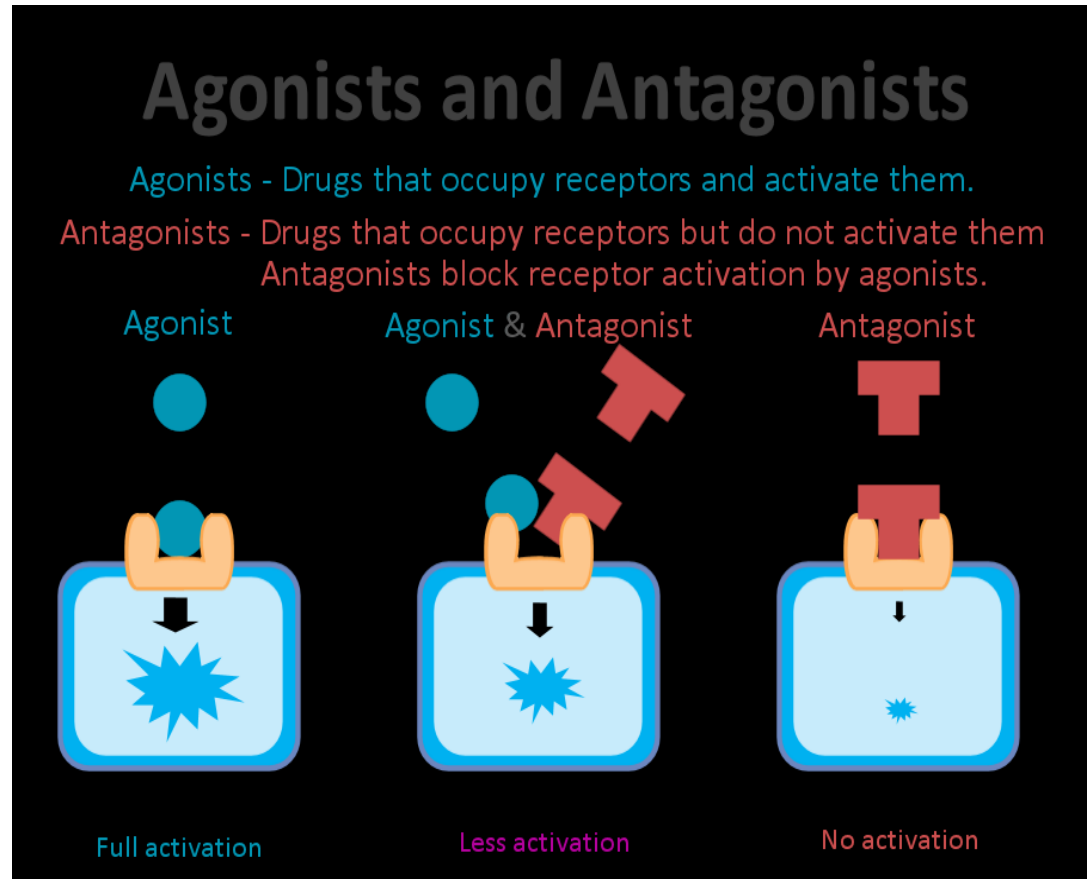
the Commission cannot

Mechanism of action of Opioid Receptors



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- **Agonisti**
- **Antagonisti**
- **Mješovito dejstvo**



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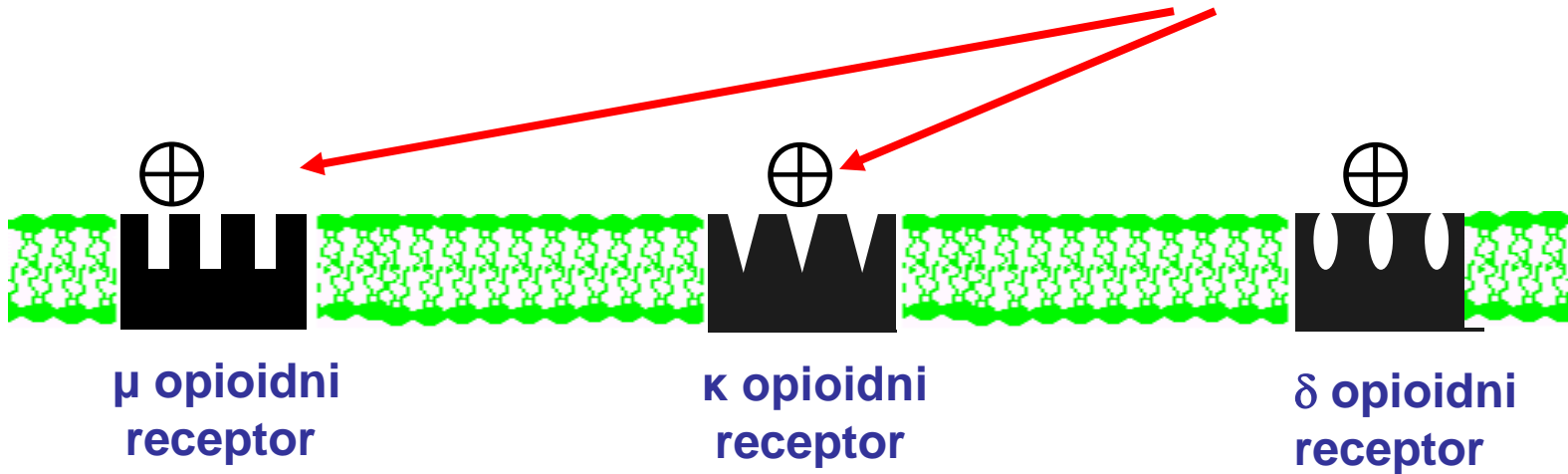
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Oglavnom agonisti μ receptora, ali djeluju i na druge receptore

- Morphine
- Heroin
- Codeine
- Fentanyl

Agonist na κ receptore, sa djelimičnom antagonist. djelov. na μ receptore

- Pentazocine



Analgezija
Respiratorna depresija
Euforija/sedacija
Psihička zavisnost
Smanjnje GI motiliteta
Mioza

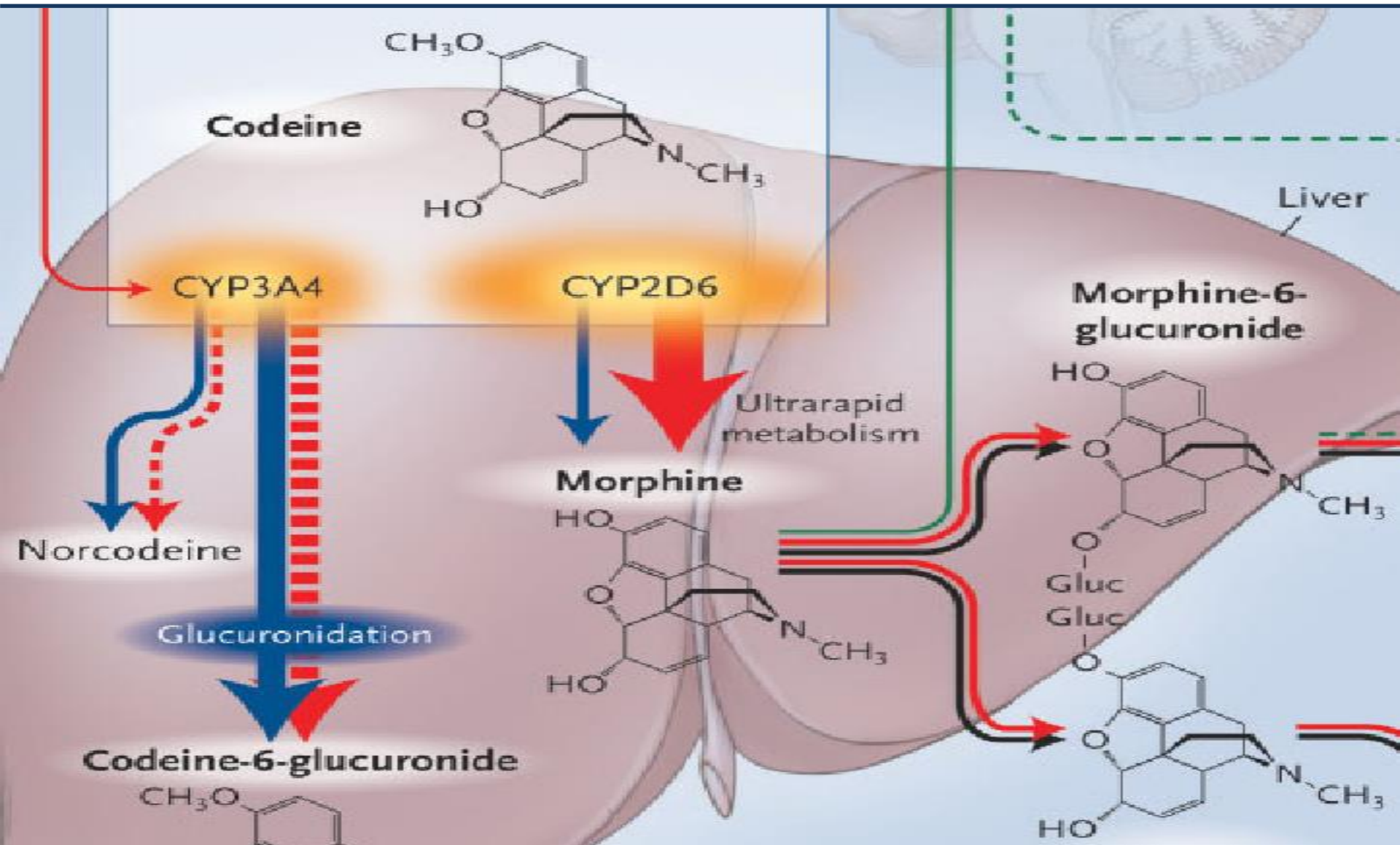
Analgezija
Sedacija
Mioza

Analgezija

Antagonist djeluje na μ , κ , δ receptore

- Naloxone
- Naltrexone

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VRLO JAKI OPIOIDI	JAČINA
-Sufentani	1000
-Fentanil	100-300
-Remifentanil	200
-Alfentanil	40-50
-Buprenorfin	10-40
JAKI	
-Butorfanol	8-11
-Hidromorfon	7-10
-Metadon	1,5
-MORFIN	1
SLABI	
Kodein	0,3
Petidin	0,2
VRLO SLABI	
-Tramadol	0,05-0,09
MORFIN = 1	







Pr

-001)

MODERATE

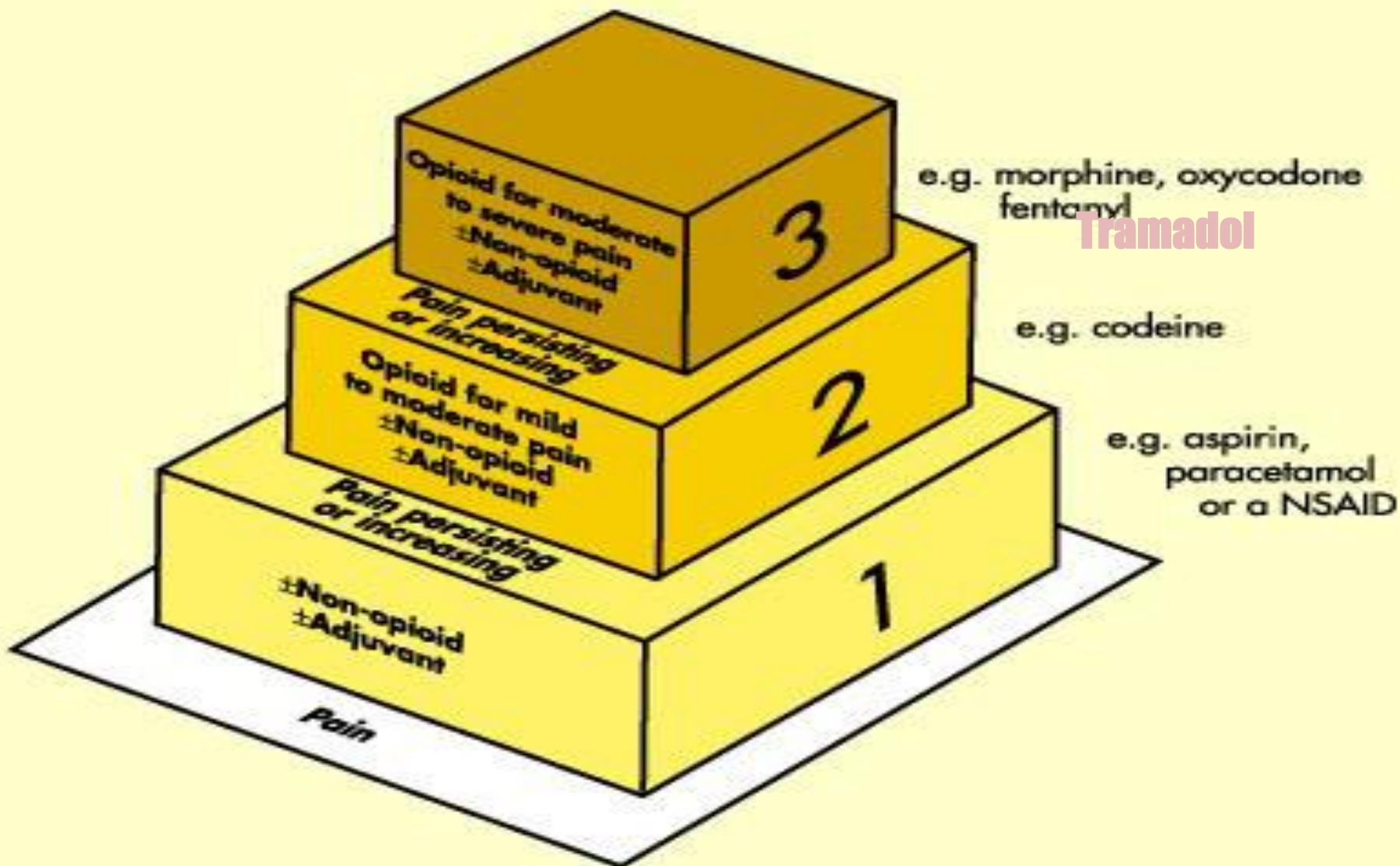
UNIVERSAL PAIN ASSESSMENT TOOL

This pain assessment tool is intended to help patient care providers assess pain according to individual patient needs. Explain and use 0-10 Scale for patient self-assessment. Use the faces or behavioral observations to interpret expressed pain when patient cannot communicate his/her pain intensity.

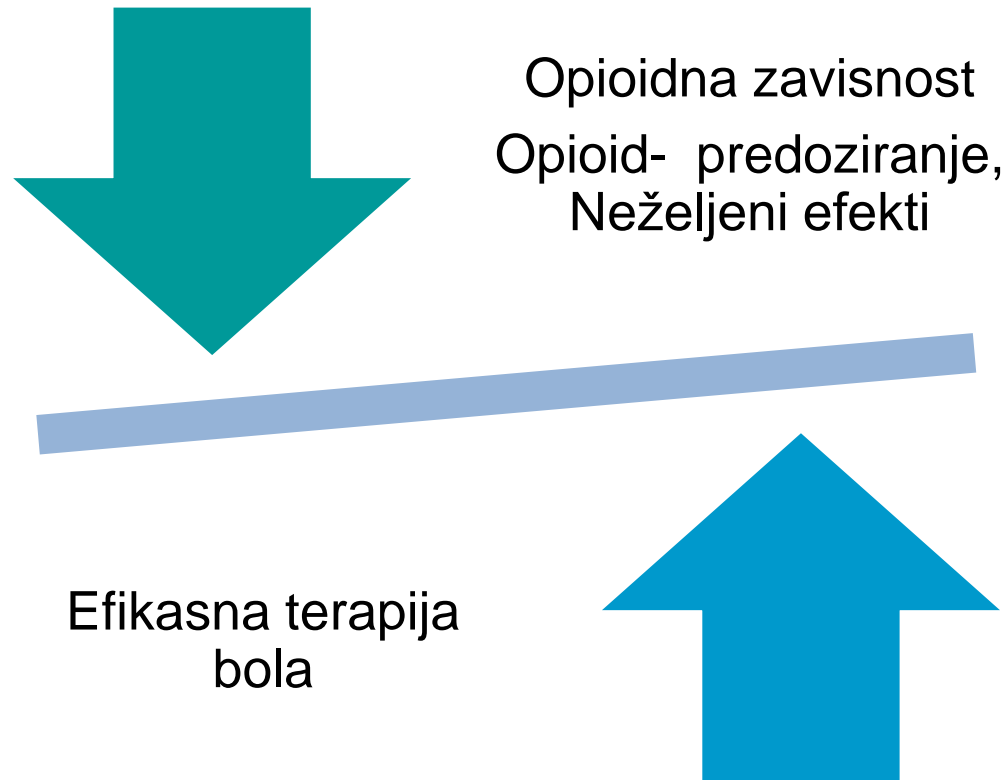
	0	1	2	3	4	5	6	7	8	9	10
Verbal Descriptor Scale	NO PAIN		MILD PAIN		MODERATE PAIN		MODERATE PAIN		SEVERE PAIN		WORST PAIN POSSIBLE
WONG-BAKER FACIAL GRIMACE SCALE											
	Alert Smiling		No humor serious flat		Furrowed brow pursed lips breath holding		Wrinkled nose raised upper lips rapid breathing		Slow blink open mouth		Eyes closed moaning crying
ACTIVITY TOLERANCE SCALE	NO PAIN		CAN BE IGNORED		INTERFERES WITH TASKS		INTERFERES WITH CONCENTRATION		INTERFERES WITH BASIC NEEDS		BEDREST REQUIRED
SPANISH	NADA DE DOLOR		UNPOQUITO DE DOLOR		UN DOLOR LEVE		DOLOR FUERTE		DOLOR DEMASIADO FUERTE		UN DOLOR INSOPORTABLE
TAGALOG	Walang Sakit		Konting Sakit		Katamtamang Sakit		Matinding Sakit		Pinaka-Matinding Sakit		Pinaka-Malalang Sakit
CHINESE	不痛		輕微		中度		嚴重		非常嚴重		最嚴重
KOREAN	통증 없음		약한 통증		보통 통증		심한 통증		아주 심한 통증		최악의 통증
PERSIAN (FARSI)	بدون درد		درد ملایم		درد معتدل		درد شدید		درد بسیار شدید		بدترین درد ممکن
VIETNAMESE	Không Đau		Đau Nhẹ		Đau Vừa Phải		Đau Nặng		Đau Thật Nặng		Đau Đớn Tận Cùng
JAPANESE	痛みがない		少し痛い		いくらか痛い		かなり痛い		ひどく痛い		ものすごく痛い

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Rizik vs. Benefit Evaluacija



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AKUTNI BOL

- Akutni bol je normalan, predvidiv fiziološki odgovor na štetni hemijski, termički ili mehanički stimulus vezan za traumu, hirurški zahvat ili akutnu bolest.
- Akutnu bol prate objektivni znaci
 - Ubrzanje pulsa
 - Porast krvnog pritiska
 - Ne verbalni znaci i simptomi kao što su ekspresija lica i grčenje mišića .

PROCJENA BOLA

- Inicijalna procjena bola uključuje:
 - Lokaciju
 - Intenzitet
 - Senzorni kvalitet
 - Ublažavajuće I otežavajuće faktore

- Svaki novi napad bola zahtijeva novu sveobuhvatnu procjenu.

Ponovna procjena bola

- Minimalno svakih 8 sati
- Kod ordiniranja lijekova
 - IV unutar 15 minuta od ordiniranja
 - PO/IM/SC unutar 1 sata od ordiniranja

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ODGOVORNO PROPISIVANJE OPIOIDA

- Procjena rizika za zloupotrebu opijata.
- Faktori rizika za zloupotrebu:
 - Muškarci između 18 i 45 godina.
 - Lična ili porodična opterećenost zloupotrebe opijata
 - Psihijatrijska oboljenja u anamnezi (depresija, anksioznost, opsesivno-kompulzivne bolesti)

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IZBOR OPIOIDA

1. Odrediti kada započeti ili nastaviti sa opioidima
2. Izbor opioida, doze, dužine ordiniranja i prekid th.
3. Procijeniti rizik

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Izbor opioida

- a) U startu koristiti brzo djelujuće opioide
- b) Koristiti najmanju efektivnu dozu
- c) Ordinirati kratkodjelujući opijat za akutnu bol

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SVJETSKA ZDRAVSTVENA ORGANIZACIJA (SZO)

Tri koraka u pristupu terapije bola

- **KORAK BR 1 – BLAŽI BOL (1-3/10)**
- Non - opoidi
- Dodati adjuvantnu terapiju
(npr.) led, toplota

SZO PREPORUKA

- **KORAK BR. 2 (BLAG DO UMJEREN BOL) (4-7/10)**
- *Nadogradnja prvog koraka*
- *Kombinacija opioidnih analgetika (hidrokodon/acetaminofen)*
- *Obratiti pažnju na maksimizaciju adjuvantne terapije*
- Doziranje prema TT
- Obratiti pažnju na dopunske faktore (godine starosti pacijenta, težina, druga terapija...)

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SZO PREPORUKA

Korak br 3 (8-10/10)

- Koristite opoide
- Dodajte dopunsku terapiju poput anksiolitika, antiemetika, mišićni relaxansi
- Početi sa opoidima kratkotrajnog dejstva
- Prebaciti se na opoide dužeg dejstva koristeći preporuke

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ZAPAMTITI

- Intezitet bola određuje korak terapije.
- Opoidi su jedina grupa analgetika u kojoj se mora pažljivo odraditi titracija doze!!!
- Većina efekata opoida se smanjuje kroz par dana.

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UOBIČAJEN PRVI IZBOR OPOIDA

- Kodein
- Morfijum
- Hidromorfon
- Oksikodon

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Zajedničke karakteristike opoida

- Polu-vrijeme života lijeka 2-4 h
- Dužina trajanja analgezije iznosi 4-5 časova po određivanju adekvatne doze.
- Zadržan efekat otpuštanja iznosi između 10 i 12 časova.

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MORFIJUM

Trenutno djelovanje: 15 do 60 min

Vrhunac efekta: 30 min do 1 h

Poluvrijeme života: 1.5 do 2 h

IV: 0.05 to 0.1 mg/kg

5 min prije procedure; max: 15 mg/doza

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FENTANIL

- Fentanil je potentniji 80 do 100 puta od morfijuma
- Studije pokazuju da je mnogo manja konstipacija i sedmolentnost kod transdermalne upotrebe nego kod iv primjene morfijuma.

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Dostupni opioidi kod nas



**IR Morphine
(brzo delujući)**

Oramorph (morfin sulfat) Jednodozni kontejner 10 mg,
30 mg Oralne kapi, rastvor 20 ml (20 mg/ml)
Sirup 100 ml (10 mg/5ml)

**IR Morphine
(brzo delujući)**

Morphine Merck (morfin hidrohlorid) Oralne kapi, rastvor, 50ml

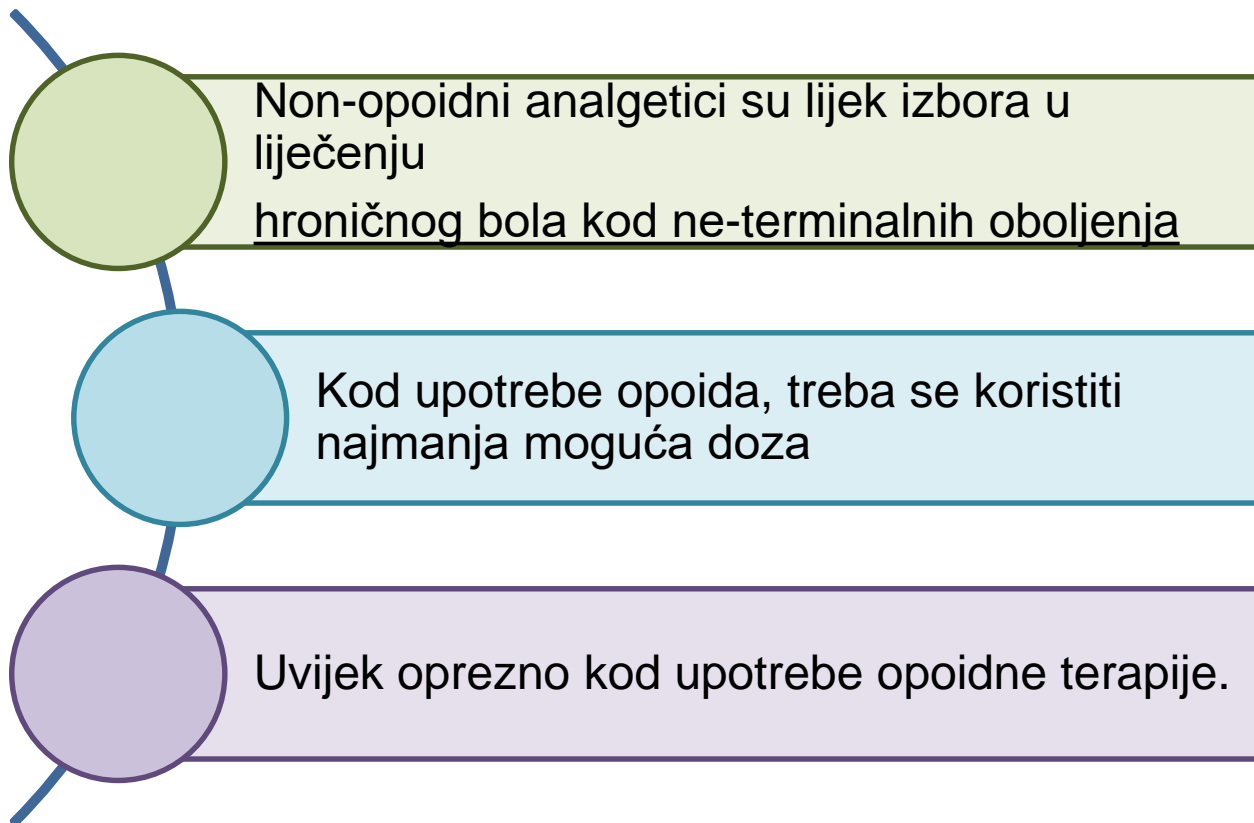
**SR opioidi
(sporo delujući)**

Hidromorfon, Jumista® Tablete sa produženim oslobađanjem, 8mg, 16mg, 32mg, 64mg

**SR opioidi
(sporo delujući)**

Fentanil, Duragesic® Transdermalni flaster 25, 50 i 100 mcg/h

GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN



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Dowell D, et al. CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. *MMWR Recomm Rep* 2016;65(No. RR-1):1–49.



Efikasnost opoida kod terapije hroničnog bola

Kod većine studija koje su trajale ≤ 6 nedelja

Nijedna studija nije radila procjenu bola, funkcije ili kvaliteta života sa opoidima i drugih tretmanima > 1 year

Studije koje su trajale > 6 nedelja su imale loše rezultate

Koji su ukazivali da dugotrajna upotreba opijata podstiče bol

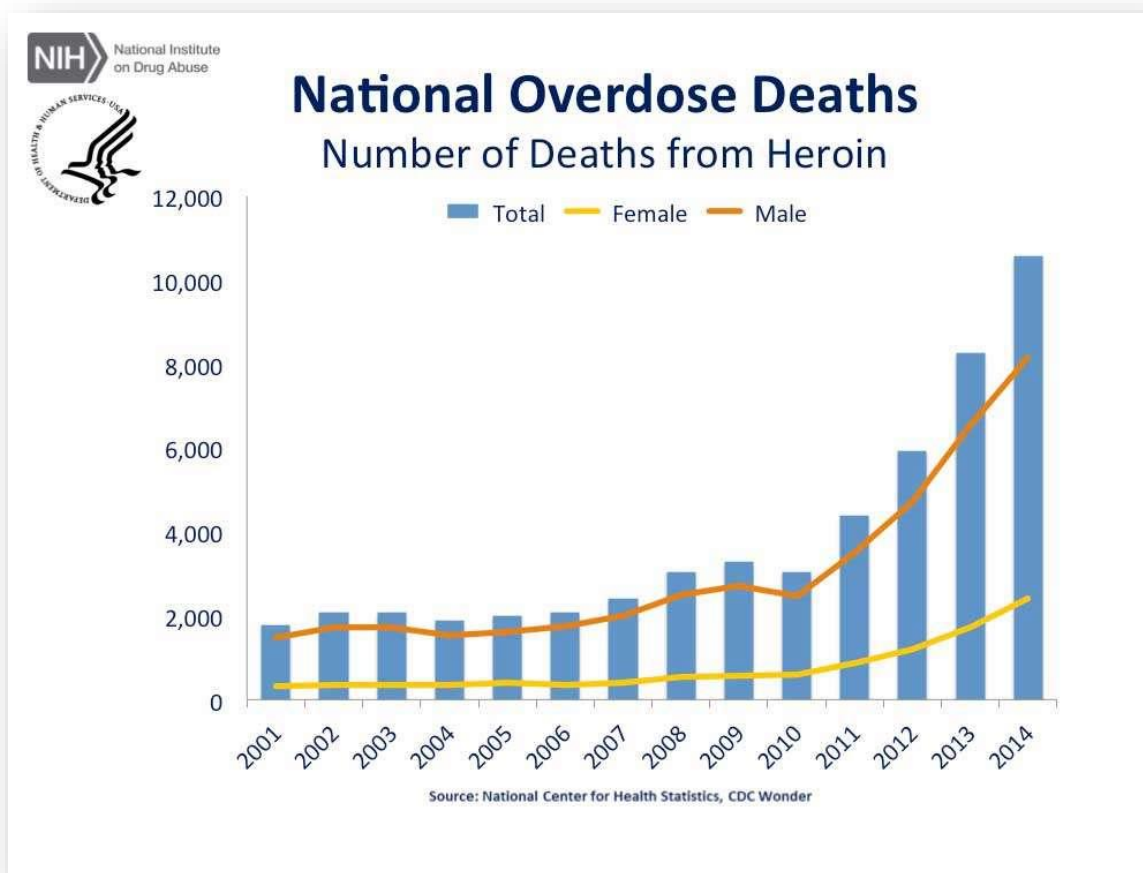
Trogodišnja prospektivna observativna studija 69,000 Post-menopauzalnih pacijentica sa rekurentnim tegobama. Pacijenti na opoidnoj terapiji su:

Manja poboljšanja u terapiji bola (ili 0.42; 95% CI 0.36 – 0.49)

Povećanje u oštećenju tjelesne funkcija /pogoršanje (ili 1.2; 95% CI 1.04 – 0.51)

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Svaka 4 od 5 novih heroinskih ovisnika su počeli sa neadekvatnom primjenom opioidnih analgetika!

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*<https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates>

Source: National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services.

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HYPNOS 2019

BANJA LUKA, 18.-21.09.2019.

