



19° Congresso
Nazionale
Società Italiana di Tossicologia

BOLOGNA
11-12 Febbraio 2020
Savoia Regency Hotel

Paracelso nel XXI secolo:
«Dosis sola facit, ut venenum non fit»

CORSO PRE-CONGRESSUALE
GESTIONE OSPEDALIERA DEL DISTURBO DA USO DI SOSTANZE

INTOSSICAZIONE ACUTA DEL PAZIENTE CON DISTURBO DA USO DI SOSTANZE

Sarah Vecchio
Servizio per le Dipendenze, ASL Biella

PAZIENTI CON DUS IN PS: ACCESSI

- 2-12% di tutti gli accessi (*Beaudoin et al, 2015; Barratt et al, 2016; Weiss et al, 2006*)
- 10% gli accessi correlati all'utilizzo di alcool
(*Cherpitel and Ye, 2012*)

HIGH USERS: 3-4 o più accessi/anno

- 25–40% degli accessi per problematiche mediche
(*Urbanoski et al, 2018*)
- > 35% degli accessi per patologie psichiatriche
(*Vandyk et al, 2013*)

PAZIENTI CON DUS IN PS: CAUSE DI ACCESSO

SOSTANZA D'ABUSO	FARMACI PER IL DUS
Overdose (accidentale/volontaria)	Overdose (accidentale/volontaria)
Intossicazione acuta	Effetti avversi
Overdose (accidentale/volontaria)/ADR da farmaci	
Sindrome astinenziale	
Comorbilità legate al DUS	
Traumi	

PAZIENTI CON DUS IN PS: CAUSE DI ACCESSO



DROGHE *CLASSICHE*

NUOVE SOSTANZE
PSICOATTIVE

ALCOOL



POLIABUSO

NUOVE MODALITA'
DI UTILIZZO



NUOVE SOSTANZE PSICOATTIVE



NEW/NOVEL PSYCHOACTIVE SUBSTANCES
EMERGING PSYCHOACTIVE SUBSTANCES
LEGAL HIGHS / SMART DRUGS

- Molecole di nuova sintesi (*designer drugs*)
- Molecole scartate dalla sperimentazione farmaceutica
- Vecchi brevetti riscoperti e commercializzati
- Sostanze riapparse sul mercato dopo un periodo di assenza
- Molecole note come NPS ma utilizzate in modo innovativo o insolito

NUOVE SOSTANZE PSICOATTIVE

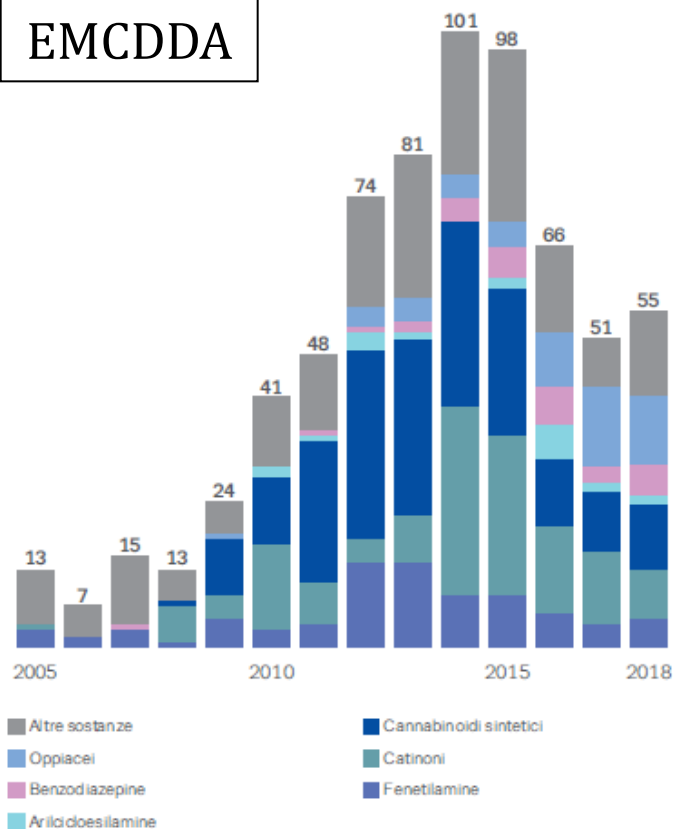


-
- Fentanili e analoghi
 - Benzodiazepine e Z compounds

NUOVE SOSTANZE PSICOATTIVE

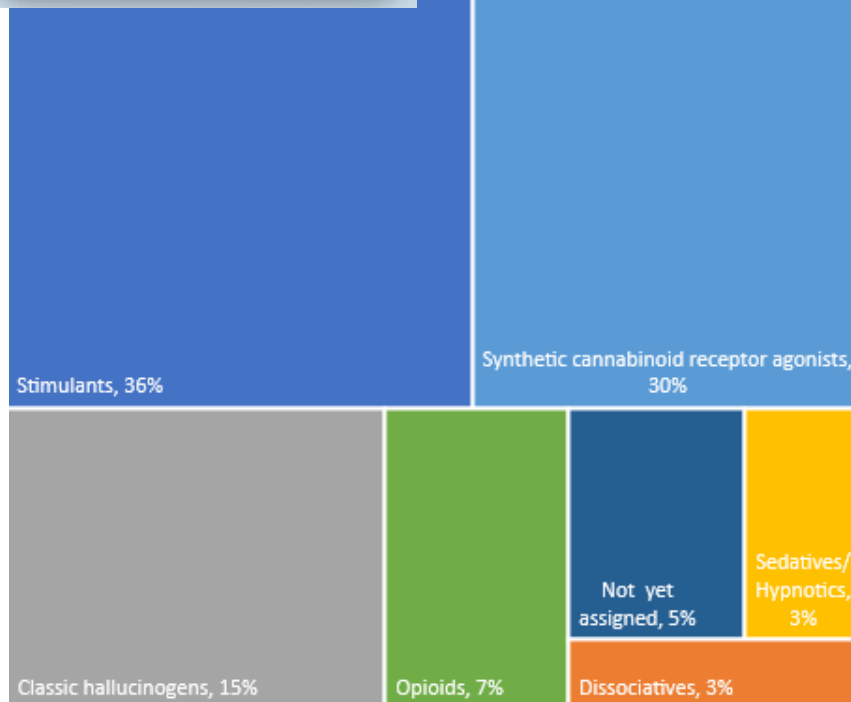
Numero e categorie delle nuove sostanze psicoattive notificate per la prima volta al sistema di allerta precoce dell'UE (2005-2018)

EMCDDA



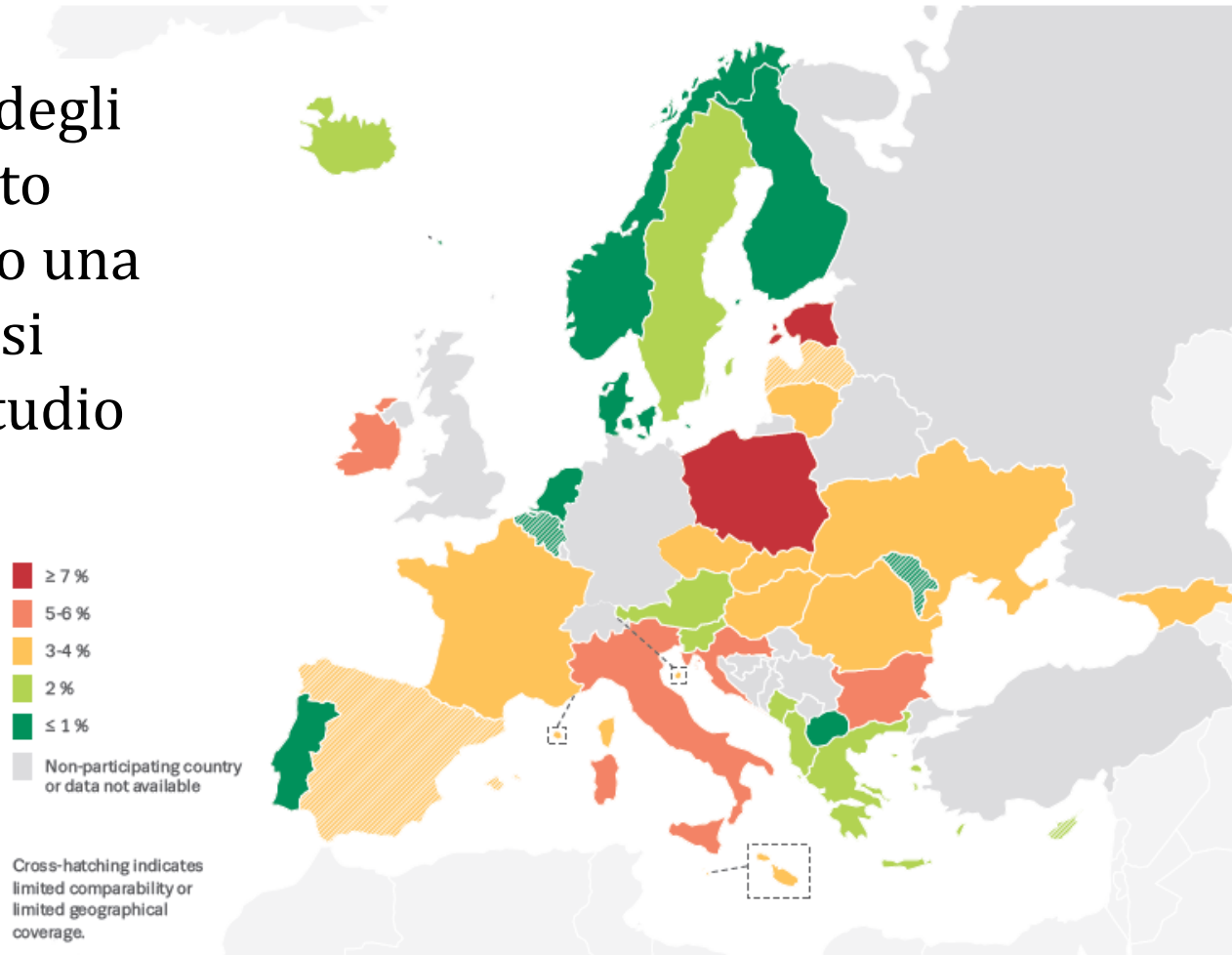
From 2008 to 2019, **119** countries and territories reported a cumulative total of **899** individual NPS

UNODC



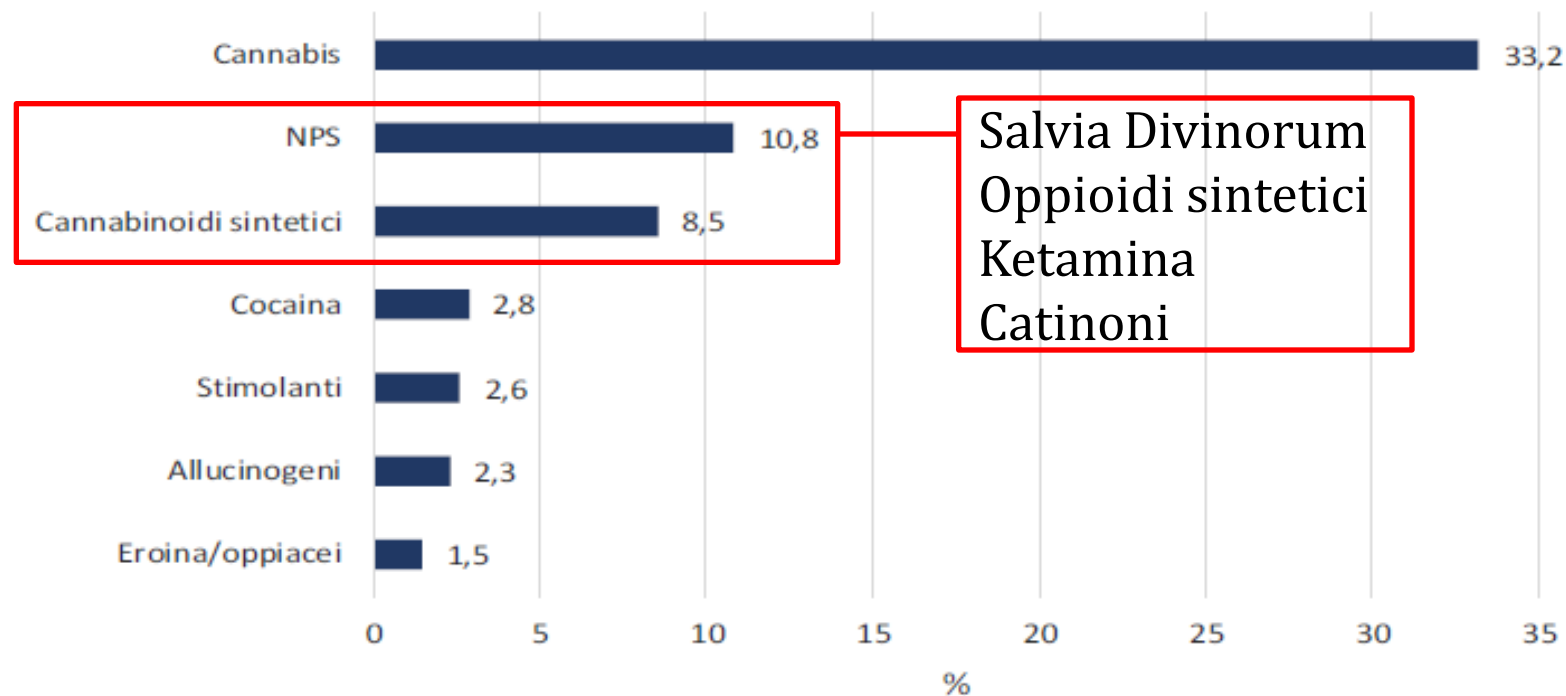
NUOVE SOSTANZE PSICOATTIVE

In media il 3% degli studenti ha usato una NPS almeno una volta nei 12 mesi precedenti lo studio



NPS: IL CONSUMO IN ITALIA

Fig. 3.1.2 - Uso di sostanze psicoattive nella vita



Lo 0,7% della popolazione generale (oltre 250.000 persone tra i 15 e i 64 anni), riferisce di aver utilizzato NPS nei 12 mesi precedenti

NPS: SOTTOSTIMA DEL FENOMENO

FONTI DI DATI

- Sequestri di sostanze
- Casi di intossicazione acuta (PS , Centri Antiveleeni), decessi
- Indagini/questionari (ESPAD, Eurobarometro, indagini nazionali...)

CRITICITÀ

- Mancanza/ritardo della conferma analitica
- Mancata rilevazione casi clinici
- Gap di velocità tra produttori e legislatore
- Scarsa richiesta di presa in carico



NPS: ACCESSI IN PS



NPS identificate in Italia su campioni di sostanze e/o biologici di soggetti arrivati in PS per intossicazione

Classe sostanza	Nome	Aspetto	Altre molecole	N. casi
Aricloesilamine (16 casi)	Ketamina	Campioni biologici	morfina, codeina, amfetamina, metamfetamina	1
		Campioni biologici	levamisolo, cocaina e metaboliti, MDMA, MDA	1
		Campioni biologici	MDMA and MDA, levamisolo, cocaina e metaboliti	1
		Campioni biologici	levamisolo, cocaina e metaboliti (incluso cocaetilene)	1
		Campioni biologici	/	7
		Campioni biologici	amfetamina, MDMA, MDA	1
		Campioni biologici	cocaina e metaboliti (incluso cocaetilene), MDMA, MDA	2
		Campioni biologici	MDMA, MDA	1
			Polvere	/
Catinoni sintetici (12 casi)	Cloroetcatinone	Campioni biologici	GHB	1
	Etilcatinone	Campioni biologici	/	1
	Efilone	Campioni biologici	/	3
	Metiletilcatinone	Campioni biologici	/	2
		Polvere		1
		Polvere	Metilmetcatinone, N-etilpentedrone	1
	MDPHP	Campioni biologici	/	3
DMT	Campioni biologici	/	1	
Triptamina (3 casi)	4-HO-MIPT	Sostanza vegetale secca	/	1
		Campioni biologici	fluorometamfetamine, fluoroamfetamine, amfetamina, metamfetamina, LSD	1

NPS: ACCESSI IN PS



NPS identificate in Italia su campioni di sostanze e/o biologici di soggetti arrivati in PS per intossicazione

Fenetilamine (1 casi)	DOC	Campioni biologici	amfetamina, MDMA, MDA	1
Oppioidi sintetici (2 casi)	Ocfentanil	Polvere + Campioni biologici		1 Decesso
Piante (1 casi)	Armina	Sostanza vegetale secca		1
Altro (11 casi)	Phenibut	Campioni biologici	/	2
		Campioni biologici	Difenidramina	1
	GHB	Campioni biologici	/	2
		Liquido	/	1
	Difenidina	Campioni biologici	Tramadolo	1
		Polvere	/	1
	2-MeO-difenidina	Campioni biologici	Difenidina, 3-MeO-PCE	1
		Campioni biologici	Descloro-N-etil-ketamina, Tramadolo	1
		Polvere	/	1

ACCESSI IN PS DROGA CORRELATI



Relazione europea sulla droga

Tendenze e sviluppi

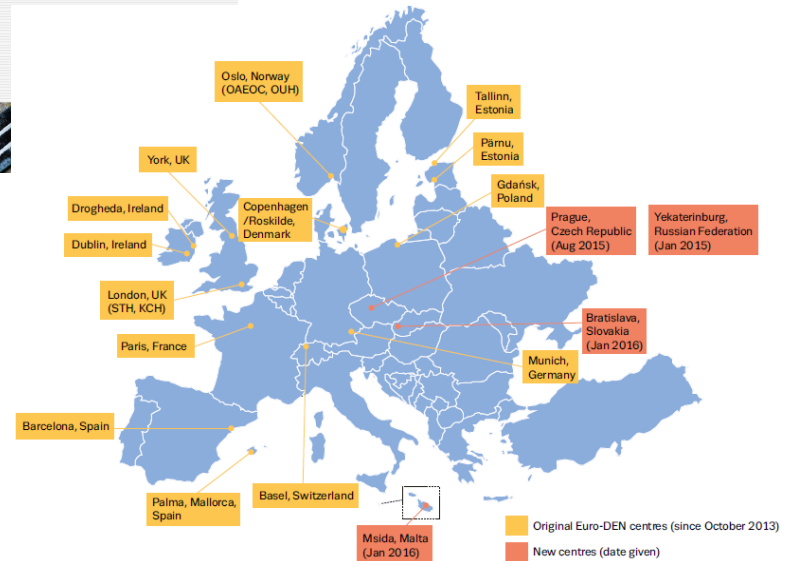
2019



RAPID COMMUNICATION

Hospital emergency presentations and acute drug toxicity in Europe

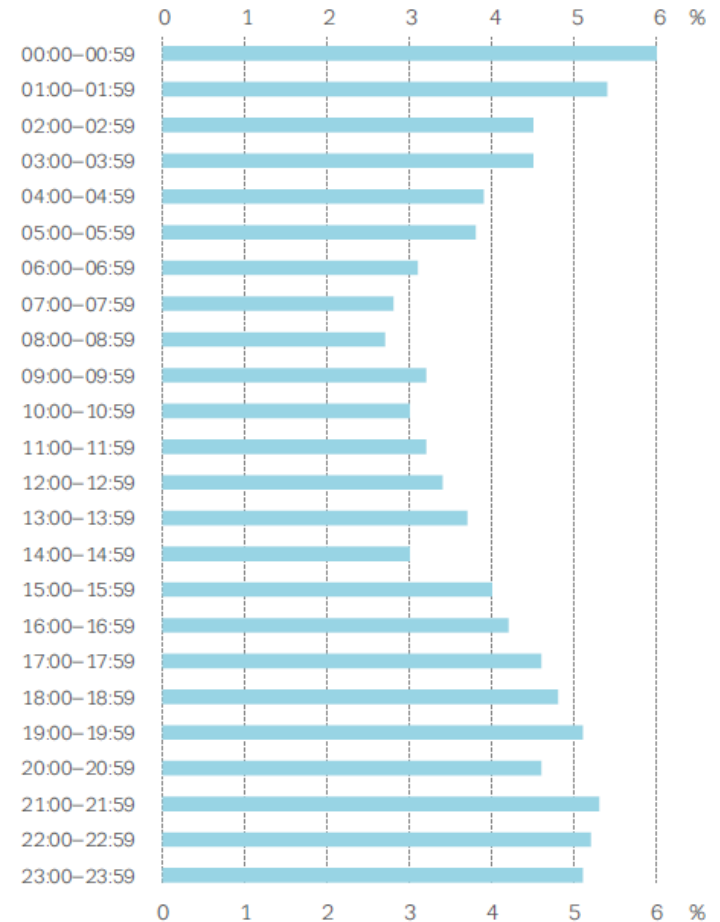
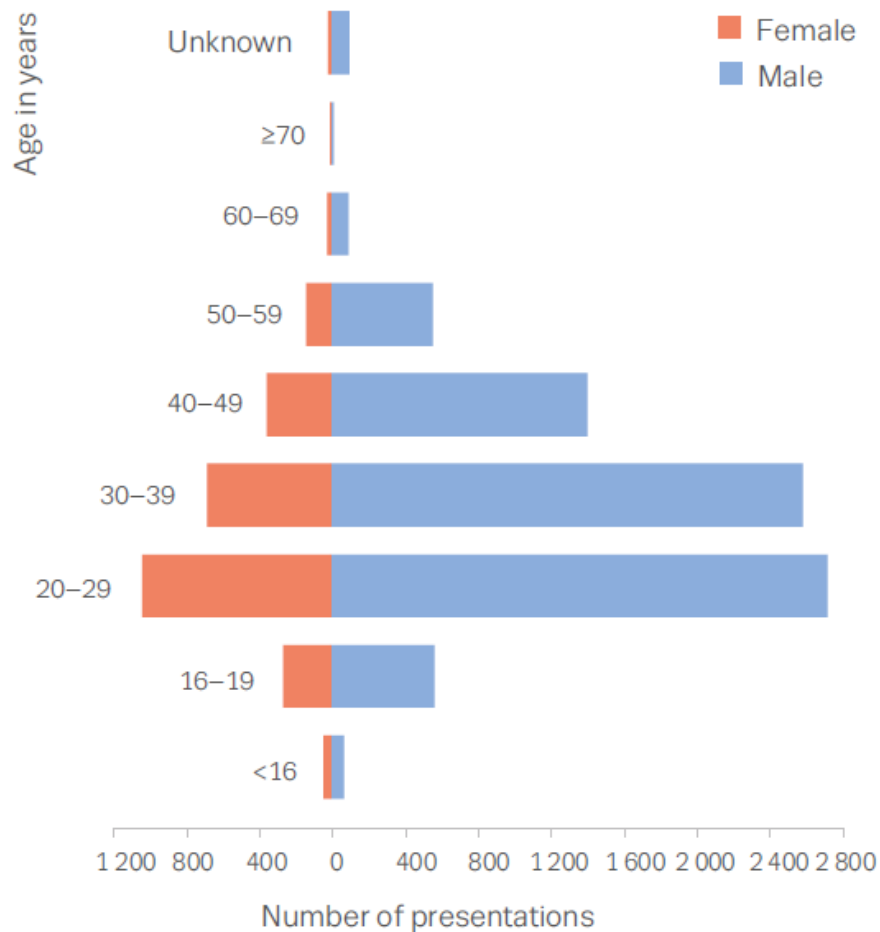
Update from the Euro-DEN Plus research group and the EMCDDA
August 2016



Nuovi indicatori per integrare le fonti di dati esistenti



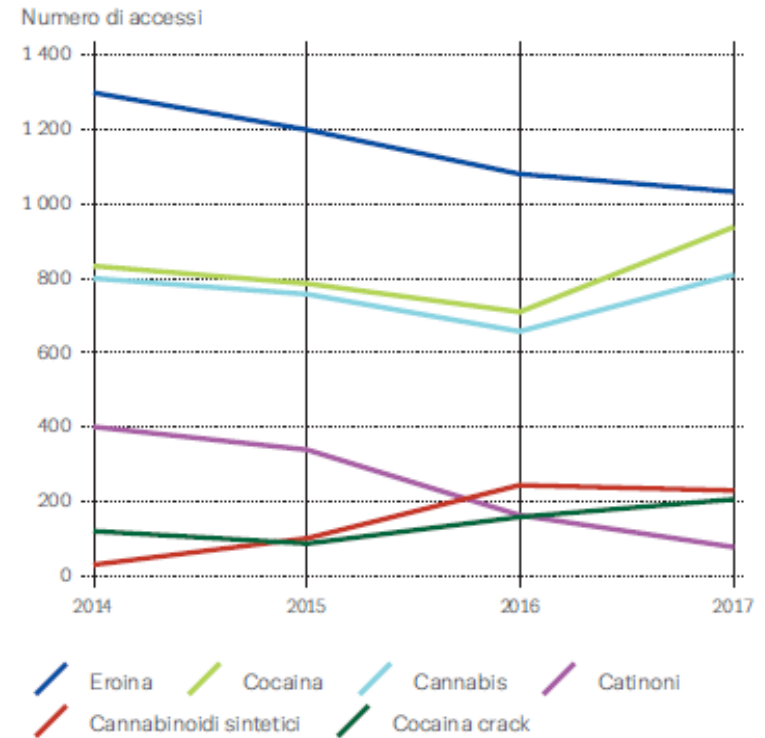
ACCESSI IN PS DROGA CORRELATI



ACCESSI IN PS DROGA CORRELATI



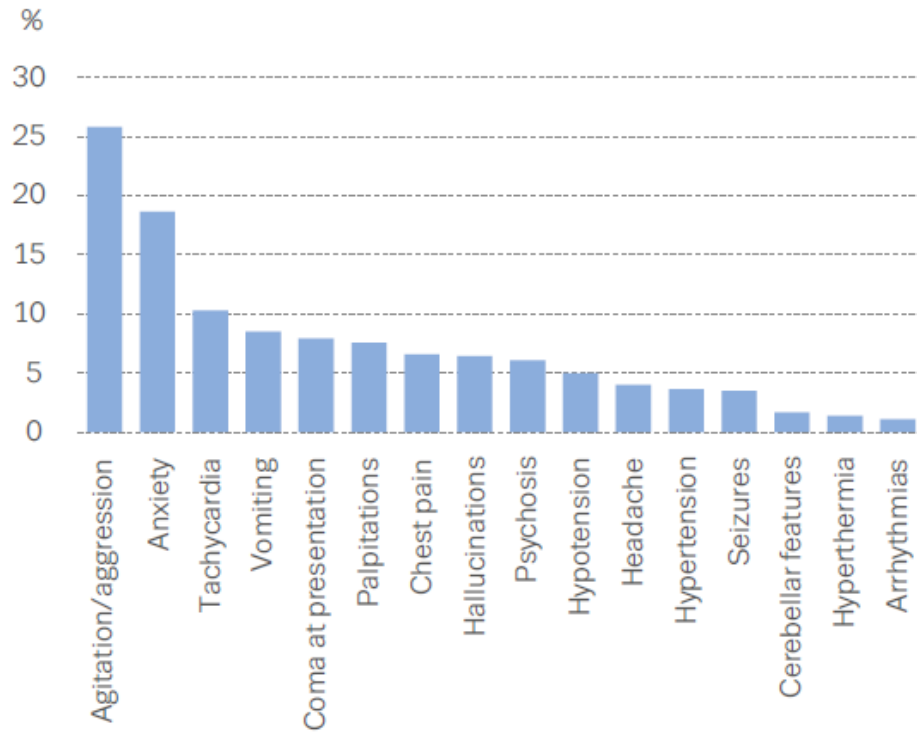
Tendenze nel numero di accessi agli ospedali sentinella correlati a determinati stupefacenti



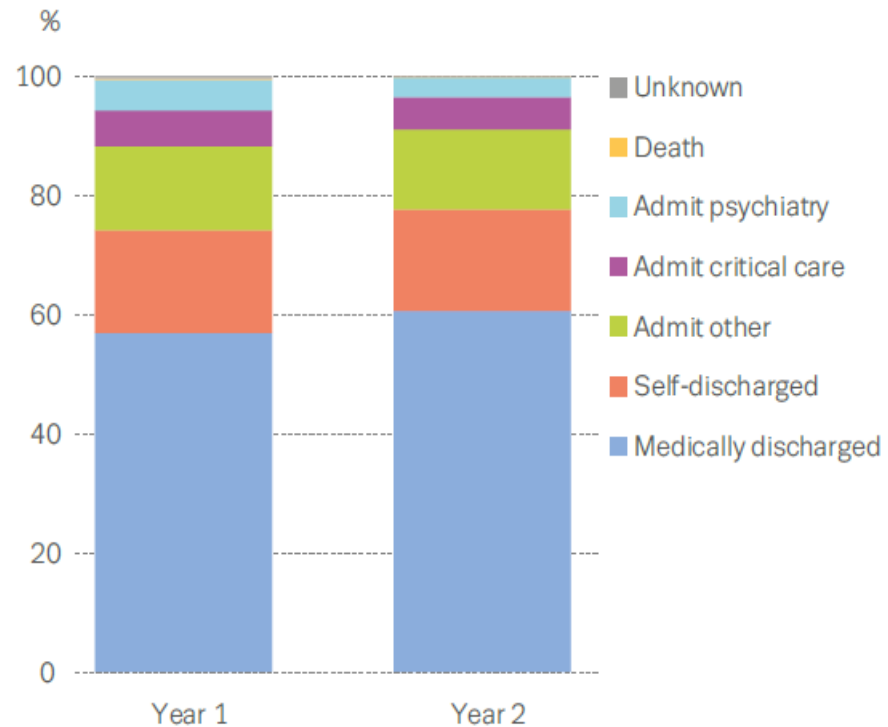
NB: dati relativi agli ospedali sentinella EUR 15-Den Plus comunicati ogni anno dal 2014 al 2017.
Fonte: Euro-DEN Plus.

ACCESSI IN PS DROGA CORRELATI

Clinical features in the acute drug toxicity presentations reported by the Euro-DEN centres from October 2013 to September 2015



Destination following discharge from the emergency department for the Euro-DEN presentations from October 2013 to September 2015



ACCESSI IN PS DROGA CORRELATI

Heroin (n=662)

Age of users: 36 (29–45) years
Male users: 81.9 %
Presentations with alcohol: 14.8 %
Length of stay: 4:59 (2:56–7:46) hr:min
To critical care: 3.9 %
Fatal: 0.9 %
Top place of use: street
Common effects: coma, low respiratory rate, agitation, hypotension

Cocaine (n=421)

Age of users: 30 (25–36) years
Male users: 76.2 %
Presentations with alcohol: 61.0 %
Length of stay: 3:40 (2:00–8:14) hr:min
To critical care: 4.0 %
Fatal: 0.5 %
Top place of use: home
Common effects: anxiety, chest pain, palpitations, agitation

Cannabis (n=421)

Age of users: 24 (19–30) years
Male users: 72.0 %
Presentations with alcohol: 48.7 %
Length of stay: 3:01 (1:49–5:24) hr:min
To critical care: 0.7 %
Fatal: 0.2 %
Top place of use: home
Common effects: anxiety, agitation, vomiting, palpitations

Mephedrone (n=88)

Age of users: 27 (24–33) years
Male users: 68.2 %
Presentations with alcohol: 18.2 %
Length of stay: 3:45 (2:03–7:19) hr:min
To critical care: 2.3 %
Fatal: 1.1 %
Top place of use: home
Common effects: agitation, anxiety, palpitations, chest pain

PAZIENTI CON DUS IN PS: QUADRI CLINICI

- PAZIENTE NEUROLOGICO
- PAZIENTE PSICHIATRICO
- PAZIENTE CARDIOLOGICO
- PAZIENTE CON QUADRI CLINICI MISTI
- PAZIENTE CON ALTRI QUADRI CLINICI

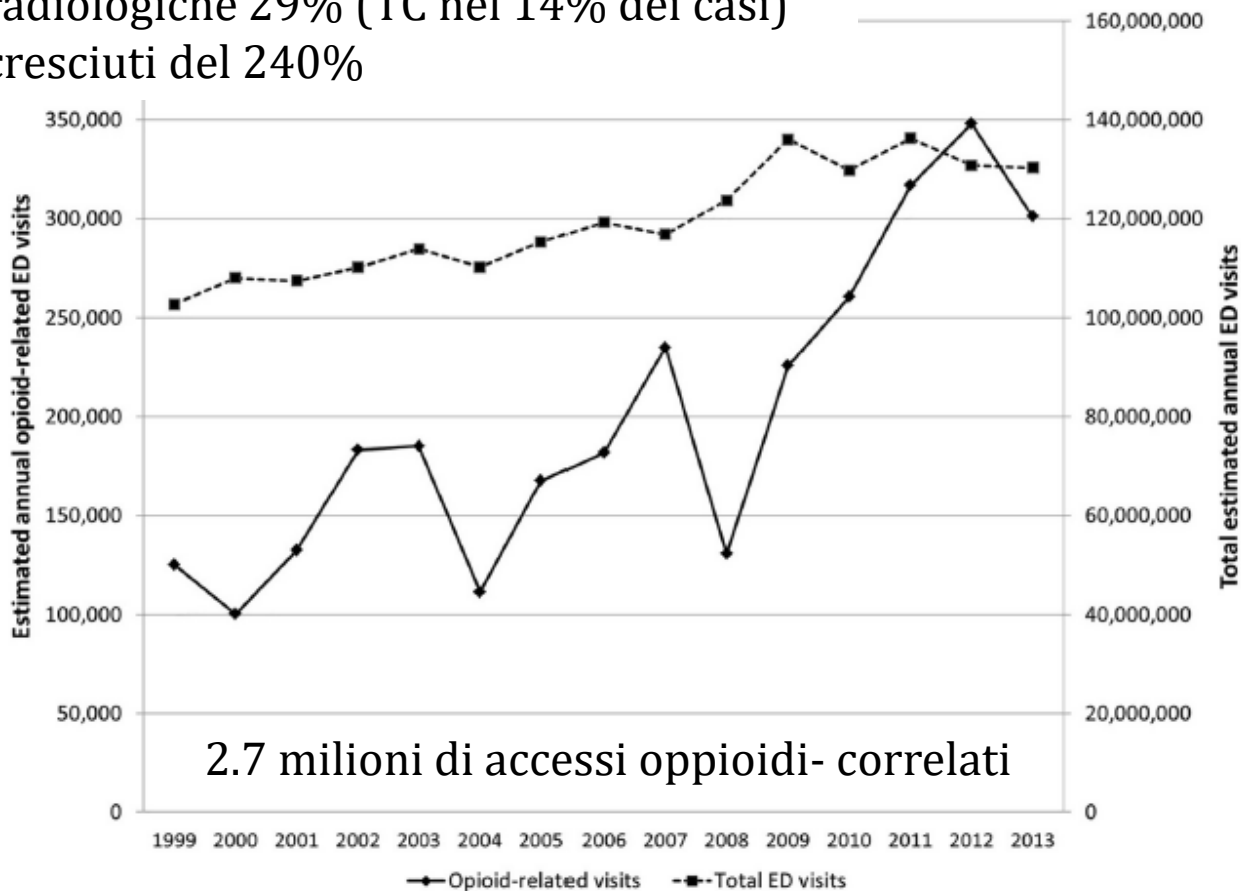


OPPIACEI: IL PAZIENTE NEUROLOGICO

Accessi oppioidi-correlati cresciuti del 170%

Indagini radiologiche 29% (TC nel 14% dei casi)

Ricoveri cresciuti del 240%



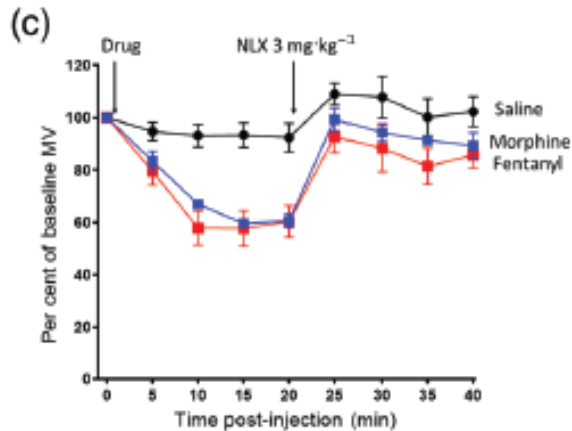
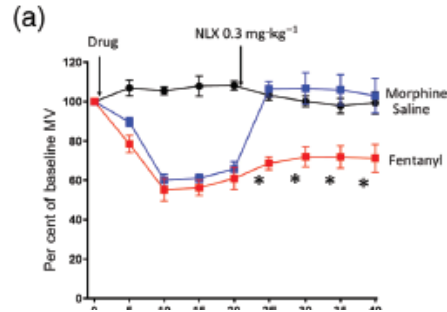
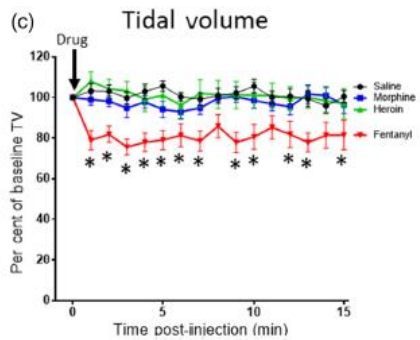
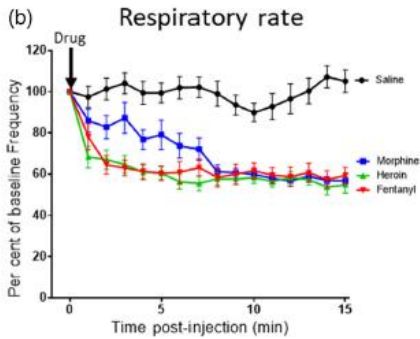
FENTANYL, ANALOGHI E OPIOIDI SINTETICI



- 38 oppioidi monitorati
- Polvere, liquidi, compresse
- Alternativa legale a oppioidi illeciti, tagliati con eroina o altri stupefacenti, spray nasali, compresse contraffatte, e-liquids
- 250 decessi tra il 2016 e il 2017
- Assunti da consumatori naive



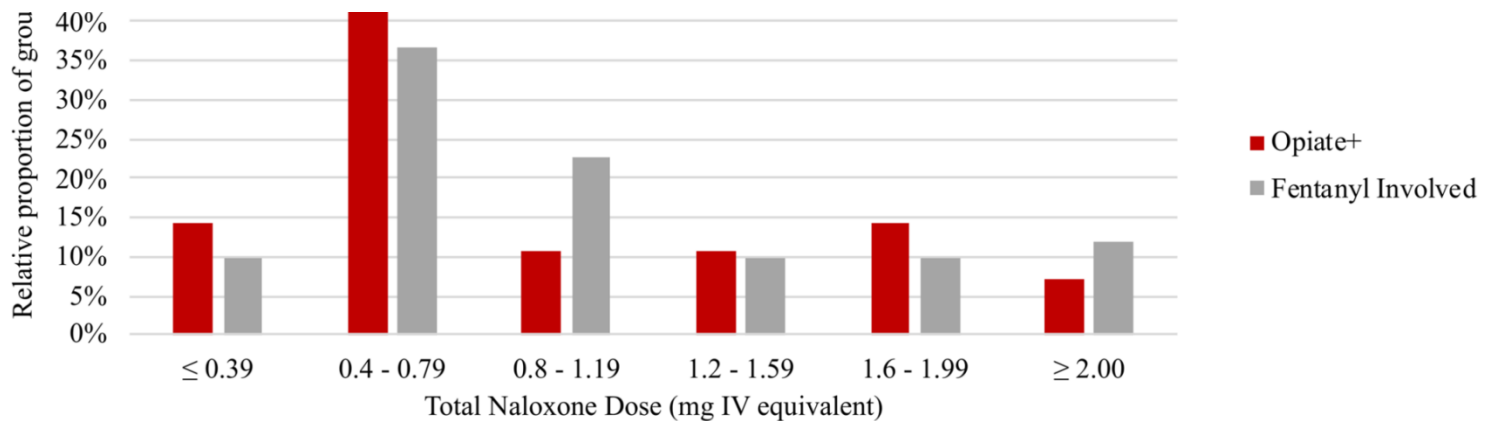
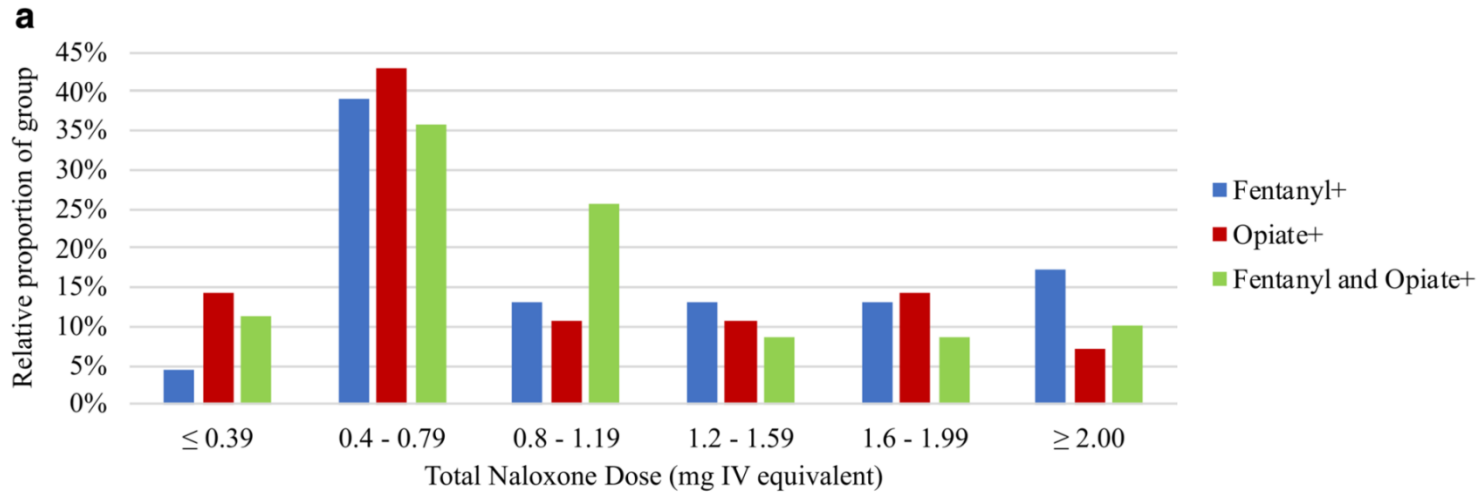
FENTANYL, ANALOGHI E OPIOIDI SINTETICI



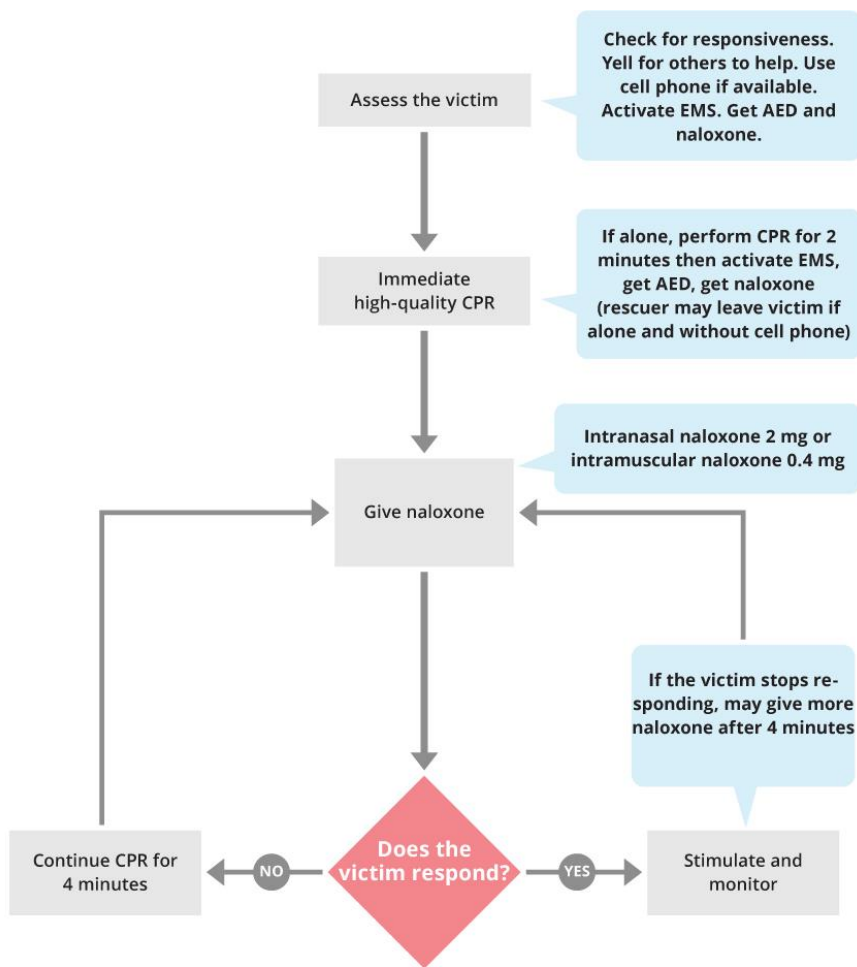
Fattori che contribuiscono alla letalità dei fentanili (31% dei decessi droga-correlati)

- Potenza maggiore
- Depressione respiratoria più rapida
- Riduzione della FR e del volume corrente
- Dosi maggiori di antidoto

GESTIONE DELL'OVERDOSE DA OPPIACEI



GESTIONE DELL'OVERDOSE DA OPPIACEI



EROINA E NUOVE MODALITA' DI CONSUMO

Condividi:



Commenti:

16

Ora è allarme eroina a Milano: giovani fumano nella metropolitana affollata

Sergio Rame - Gio, 17/01/2019 - 10:57



commenta

Mi piace 210

Fumano **eroina** come se niente fosse, come se non si trovassero sul vagone affollato della metropolitana di Milano.



Drogati fumano eroina sulla metropolitana di Milano

Allarme eroina. E in comunità finiscono i minori

Eraina, allarme minori. Ora si fuma e fa meno paura. Come accorgersi che un ragazzo ne fa uso.



Bolzano, l'eroina da fumo è il nuovo veleno per i giovanissimi

Costa poco e annulla i rischi infettivi, ma gli effetti collaterali e il pericolo di dipendenza sono identici e tremendi

di Alan Conti

Droga

Eroina Da Fumo

Sert

La Strada. Giovani



RollingStone

Newsletter

Menu Musica Cinema TV Politica Opinioni Cover Video



Stagnola e pippotto, scoprire l'eroina a 14 anni

Il boom degli oppiacei tra i giovani: il consumo frequente ai massimi storici da 10 anni a questa parte

EROINA E NUOVE MODALITA' DI CONSUMO

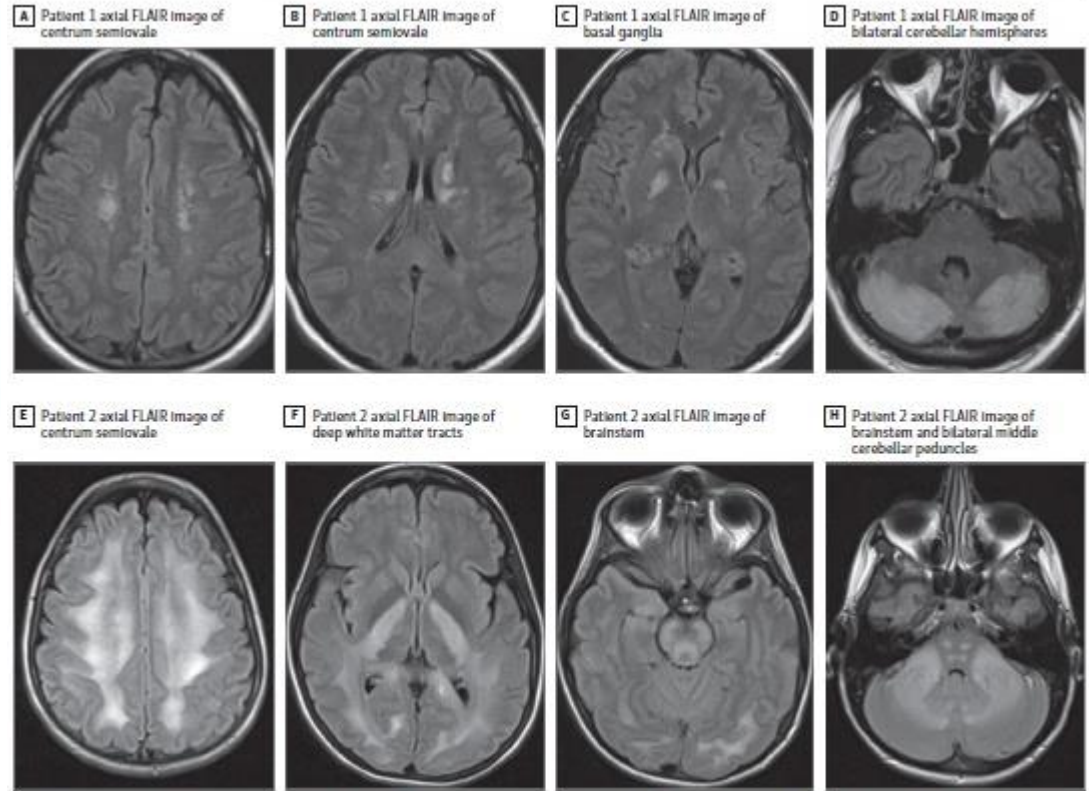
Figure 1. Chasing the Dragon



Chasing the dragon is a method of heating heroin over aluminum foil with controlled flame of a lighter and inhaling the resultant fumes by following or chasing after them. This image is courtesy of the Advisory Council on the Misuse of Drugs (United Kingdom) under the Open Government Licence version 3.0 (http://findings.org.uk/count/downloads/download.php?file=ACMD_6.txt).



Figure 2. Imaging Manifestations of Chasing the Dragon Leukoencephalopathy



Magnetic resonance Imaging scans obtained from 2 patients with toxic leukoencephalopathy after heroin exposure. A-D, Axial fluid-attenuated inversion recovery (FLAIR) images from patient 1, with representative images chosen displaying white matter changes in the centrum semiovale (A and B),

basal ganglia (C), and bilateral cerebellar hemispheres (D). E-H, Axial FLAIR images from patient 2, which shows more severe, widespread disease involving the centrum semiovale (E), deep white matter tracts (F), brainstem (G and H), and the bilateral middle cerebellar peduncles (H).

The Emerging Role of Inhaled Heroin in the Opioid Epidemic. A Review.
JAMA Neurol. 2018;75(11):1423-1434

EROINA E NUOVE MODALITA' DI CONSUMO

Table. Clinical Diagnostic Criteria and Categories for CTD Leukoencephalopathy

Diagnostic Category	Inclusion Criteria	Exclusion Criteria for Possible or Probable CTD
Definite CTD: Patient fulfills all of the inclusion criteria. Probable CTD: Patient fulfills inclusion criteria 1 through 4. Possible CTD: Only inclusion criteria 1 through 3 are met, or criteria 1 through 4 are accompanied by confirmed polysubstance or polyroute heroin abuse. ^c	<ol style="list-style-type: none"> 1. Presence of a clinical syndrome suggestive of leukoencephalopathy. 2. Positive heroin toxicological testing.^a 3. Confirmed report of CTD inhalation by the patient, his or her next of kin, or a witness. 4. Supportive neuroimaging 5. Neuropathology findings consistent with spongiform leukoencephalopathy.^d 	<ol style="list-style-type: none"> 1. Confirmed history of acute intoxication or exposure to a toxin other than heroin that is capable of producing a CTD-like outcome.^b 2. Overt clinical picture suggesting an infectious, demyelinating, vascular, or paraneoplastic cause. 3. Neuroimaging consistent with a predominantly cortical involvement along with sparing of subcortical areas and posterior fossa.

Abbreviation: CTD, chasing the dragon.

^a While a positive urine test result is supportive of heroin (detected as morphine) use in the preceding 48 to 96 hours, the fact that only 6-MAM (detectable for 2-8 hours) is specific for heroin inhalation makes a negative toxicology equivocal.¹⁷⁰

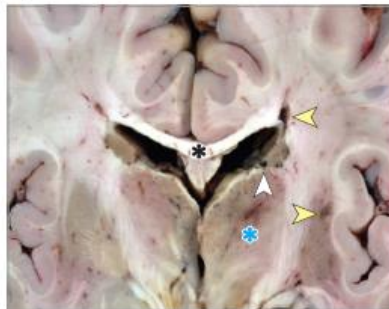
^b Antineoplastic agents include cranial irradiation, methotrexate, carmustine, cisplatin, cytarabine, fluorouracil, levamisole, fludarabine, thiotepa, interleukin 2, and interferon α ; immunosuppressive drugs include cyclosporine and tacrolimus; antimicrobial agents include amphotericin B and

hexachlorophene; drugs of abuse include toluene, ethanol, cocaine, 3,4-methylenedioxymethamphetamine, and psilocybin; and environmental toxins include carbon monoxide, arsenic, and carbon tetrachloride.¹²⁴

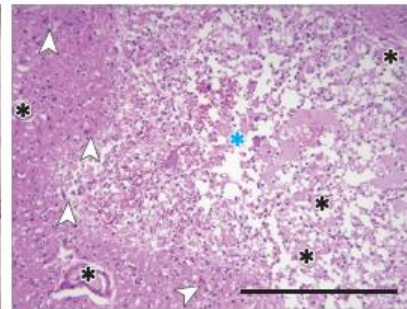
^c These confounders may be frequent bystanders (eTable 2 in the Supplement), which must not preclude a presumptive clinical suspicion for CTD leukoencephalopathy.

^d While a biopsy is discouraged in clinical practice, neuropathology in deceased individuals remains the gold standard for CTD leukoencephalopathy diagnosis.

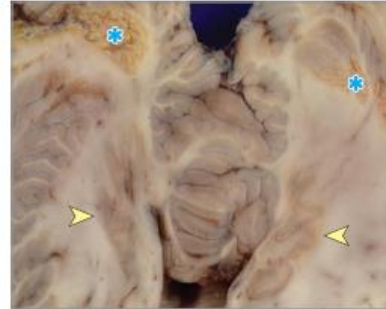
A Coronal section through cerebral hemisphere



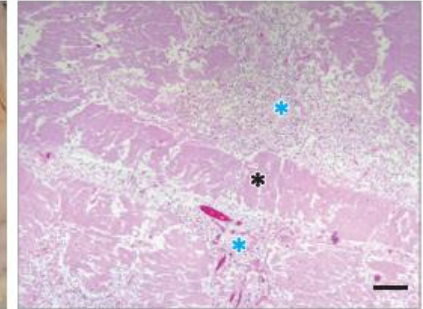
B Hematoxylin-eosin stain ($\times 200$) of cerebral hemisphere



C Transverse section of cerebellum



D Hematoxylin-eosin stain ($\times 200$) of cerebellum



OPPIACEI: IL PAZIENTE NEUROLOGICO

A 54-year-old man presented to the emergency department with confusion and Parkinsonian features after suspected heroin snorting. He had magnetic resonance imaging of the brain demonstrating isolated symmetric bilateral globus pallidus (GP) restricted diffusion and edema consistent with hypoxic ischemic encephalopathy. In contrast to other anoxic/ischemic insults, where the GP is preferentially spared, autopsy reports on intravenous heroin users have found the GP to be specifically affected, often demonstrating symmetric bilateral lesions. Opioid toxicity should be considered in patients presenting with Parkinsonian features on examination or pallidal lesions on imaging, especially in younger adults where infarction is less common. [Clin Pract Cases Emerg Med. 2019;3(4):440–441.]

Opioid Overdose With Parkinsonian Features

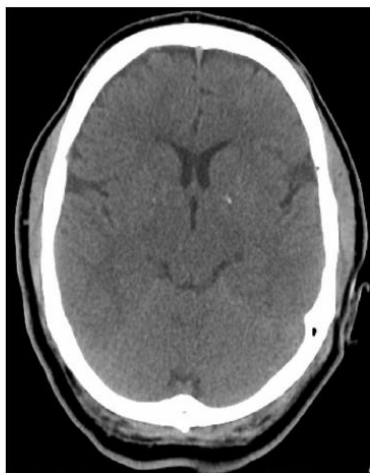


Image 1. Computed tomography scan of the brain without contrast obtained hours earlier without evidence of globus pallidus ischemia.

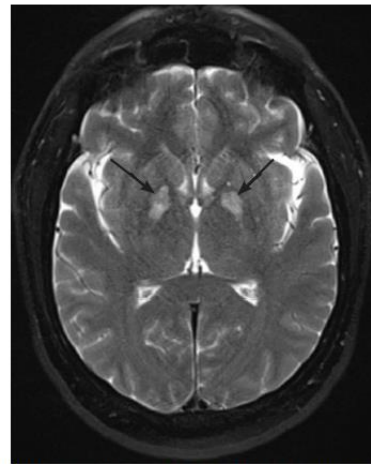


Image 2. Brain magnetic resonance T2/fluid attenuated inversion recovery with evidence of bilateral globus pallidus ischemia (arrows).

OPPIACEI: IL PAZIENTE ORL

Reference (First Author, Year)	Patient Age (Years)/ Gender	Ingestion	Symptoms	Audiometric Evaluation	Intervention	Outcome
Mulch, 1979 (5)	20/male	Heroin (acute)	Bilateral hearing loss	Bilateral sensorineural hearing loss	None reported	Resolution at 3 days
Polpathapee, 1984 (8)	25/male	Heroin (acute on chronic)	Bilateral hearing loss, aural fullness	Bilateral sensorineural hearing loss	Vitamins, fluids, electrolytes, Xanthinol nicotinate, Vitamin B _{1,6,12}	No improvement
Oh, 2000 (6)	34/female	Hydrocodone/ Acetaminophen (chronic)	Bilateral hearing loss	Bilateral sensorineural hearing loss	Prednisone, Cochlear implantation	Functional hearing
	32/male	Hydrocodone/ Acetaminophen (chronic)	Bilateral hearing loss, tinnitus, aural fullness	Bilateral sensorineural hearing loss	None reported	Not reported
Ishiyama, 2001 (7)	47/male	Heroin (acute on chronic)	Bilateral hearing loss, tinnitus, aural fullness	Bilateral sensorineural hearing loss	None reported	Normal hearing at 3 weeks subjectively and on audiometry
Kortequee, 2005 (10)	26/male	Heroin (acute on chronic)	Right sided hearing loss, vertigo	Right sided sensorineural hearing loss	No treatment	No improvement at 3 months subjectively or on audiometry
Schrock, 2008 (9)	23/male	Heroin (acute)	Bilateral hearing loss	Bilateral sensorineural hearing loss	Prednisolone, pentoxifylline	Normal hearing per patient, Persistent high frequency hearing loss per audiometry
van Gaalen, 2009 (11)	37/male	Methadone (acute)	Bilateral hearing loss, tinnitus	Bilateral sensorineural hearing loss	None reported	Normal hearing per patient and on repeat audiometry at 10 days
Shaw (current study), 2010	20/male	Methadone (acute)	Bilateral hearing loss	None	Abstinence of opioid	Resolution at 2 days

IL PAZIENTE NEUROLOGICO

Demographic and clinical data of patients who had consumed GHB/GBL and were attended at the emergency department and comparison according to whether GHB/GBL was consumed alone or in combination with ethanol.

	All patients N = 609 n (%)	Missing values n (%)	Group A GHB/GBL alone N = 183 n (%)	Group B GHB/GBL + ethanol N = 426 n (%)	P value
Demographical data					
Age [mean (DE)]	32.0 (8.4)	10 (1.7)	33.1 (7.9)	31.5 (8.5)	0.029
Sex (female)	116 (19.0)	0 (0)	30 (16.4)	86 (20.2)	0.274
Arrival at ED by ambulance	493 (81.1)	1 (0.2)	125 (68.3)	368 (86.6)	< 0.001
Clinical characteristics (ordered by frequency)					
Decreased level of consciousness (Glasgow < 13 points)	309 (56.1)	58 (9.5)	78 (49.1)	231 (58.9)	0.034
Agitation or aggressive behaviour	198 (33.6)	20 (3.3)	61 (34.9)	137 (33.1)	0.679
Bradycardia (heart rate < 60 bpm)	101 (18.0)	47 (7.7)	39 (23.5)	62 (15.7)	0.027
Hypothermia (body temperature < 35 °C)	47 (16.9)	331 (54.4)	11 (13.9)	36 (18.1)	0.403
Tachycardia (hear rate > 100 bpm)	89 (15.8)	47 (7.7)	26 (15.7)	63 (15.9)	0.942
Tachypnoea (breathing rate > 20 bpm)	70 (14.5)	126 (20.7)	18 (14.0)	52 (14.7)	0.839
Vomiting	80 (13.6)	20 (3.3)	18 (10.3)	62 (15.0)	0.129
Anxiety	74 (12.6)	20 (3.3)	19 (10.9)	55 (13.3)	0.417
Bradypnoea (breathing rate < 12 bpm)	44 (9.1)	126 (20.7)	15 (11.6)	29 (8.2)	0.246
Seizures	41 (7.0)	20 (3.3)	11 (6.9)	30 (7.2)	0.675
Hallucinations	18 (3.1)	20 (3.3)	4 (2.3)	14 (3.4)	0.480
Headache	15 (2.5)	20 (3.3)	3 (1.7)	12 (2.9)	0.404
Hypertensive episode (SBP > 180 mmHg)	12 (2.4)	113 (18.6)	5 (3.8)	7 (1.9)	0.318
Palpitations	14 (2.4)	20 (3.3)	6 (3.4)	8 (1.9)	0.373
Hypotensive episode (SBP < 90 mmHg)	10 (2.0)	113 (18.6)	2 (1.5)	8 (2.2)	1.00
Psychotic signs and symptoms	11 (1.9)	20 (3.3)	4 (2.3)	7 (1.7)	0.740
Chest pain	8 (1.4)	20 (3.3)	2 (1.1)	6 (1.4)	1.00
Arrhythmia	5 (0.9)	59 (9.7)	2 (1.2)	3 (0.8)	0.645
Hyperthermia (body temperature > 39 °C)	0 (0)	331 (54.4)	0 (0)	0 (0)	-



IL PAZIENTE NEUROLOGICO

		Total (74)
Personal data	Non-native (%)	21.6
	Non-resident (%)	58.1
	Mean age	25.6
Arrival	Night (20:00-8:00)	52.7
	Weekends (Friday 17:00-Monday 08:00)	37.8
	Ambulance	14.9
Triage	Red	9.5
	Yellow	58.1
	Green	31.1
	White	1.4
Ketamine use	Acute (within 12h of ketamine use)	77.0
	Intramuscular injection	5.4
Cocombitant current drug use	Only ketamine	41.9
	Alcohol	25.7
	Psychiatric drugs	5.4
	Illegal substance	46.0
Substance use	Cocaine	18.9
	Heroin	17.6
	Cannabis	12.2
	Amphetamines	9.5
	MDMA	9.5
	LSD	4.1
	Opium	2.7
Outcome	Hospital admission	9.5

		Total (74)
Neurological	Sopororous state	17.6
	Agitation state	13.5
	Confusional state	6.8
	Panic attacks	6.8
	Mydriasis	6.8
	Tremors	6.8
	Coma	4.1
	Epilepsy	2.7
	Hallucination	2.7
	Dizziness	2.7
Cardiovascular	Blurred speeches	2.7
	Neck pain	2.7
	Palpitations	5.4
Gastro-intestinal	Chest pain	5.4
	Hyperpyrexia	4.1
	Vomiting	10.8
Urological	Abdominal pain	14.9
	Complications (renal colic, urine leak, hematuria, stranguria)	6.8



IL PAZIENTE NEUROLOGICO

Substances with significant associations with seizure frequency, in any presentation; 3-MMC refers to 3-methylmethcathinone, and MDMA to 3,4-Methylenedioxyamphetamine.

Substance	N ingestions	N seizures	OR (95% CI)	p
3-MMC	25	4	4.13 (1.42–12.06)	0.023
Fentanyl	158	19	3.11 (1.91–5.04)	< 0.001
Synthetic cannabinoids	695	77	2.92 (2.29–3.73)	< 0.001
Tramadol	107	11	2.87 (1.57–5.26)	0.002
MDMA	2013	137	1.8 (1.49–2.16)	< 0.001
GHB	3140	170	1.35 (1.14–1.63)	< 0.001
Cocaine	4460	221	1.27 (1.09–1.48)	0.002
Heroin	5159	126	0.51 (0.42–0.62)	< 0.001
Diazepam	792	15	0.42 (0.25–0.71)	< 0.001
Alprazolam	519	6	0.25 (0.11–0.57)	< 0.001
Clonazepam	1212	13	0.23 (0.13–0.39)	< 0.001
Oxazepam	202	0	–	0.002



Substances with significant association with seizure frequency, in single drug presentations.

Substance	Single N (% of total ingestions of substance)	Seizures N (% of seizures with this substance)	OR (95% CI)	p
Fentanyl	68 (43%)	7 (32%)	2.63 (1.20–5.80)	0.024
Synthetic cannabinoids	529(76%)	59 (76%)	2.94 (2.08–4.17)	< 0.001
MDMA	907 (45%)	59 (43%)	1.65 (1.25–2.18)	< 0.001
GHB	1506 (49%)	92 (54%)	1.45 (1.16–1.82)	0.002
Heroin	2517 (49%)	57 (45%)	0.46 (0.35–0.61)	< 0.001
Clonazepam	191 (16%)	2 (15%)	0.22 (0.06–0.91)	0.013
Cannabis	1952 (49%)	61 (38%)	0.65 (0.50–0.86)	0.002

CANNABINOIDI SINTETICI

Table 3 Adverse effects of SCRA overdose in 58 patients treated at the NPCC from 2013 to 2016

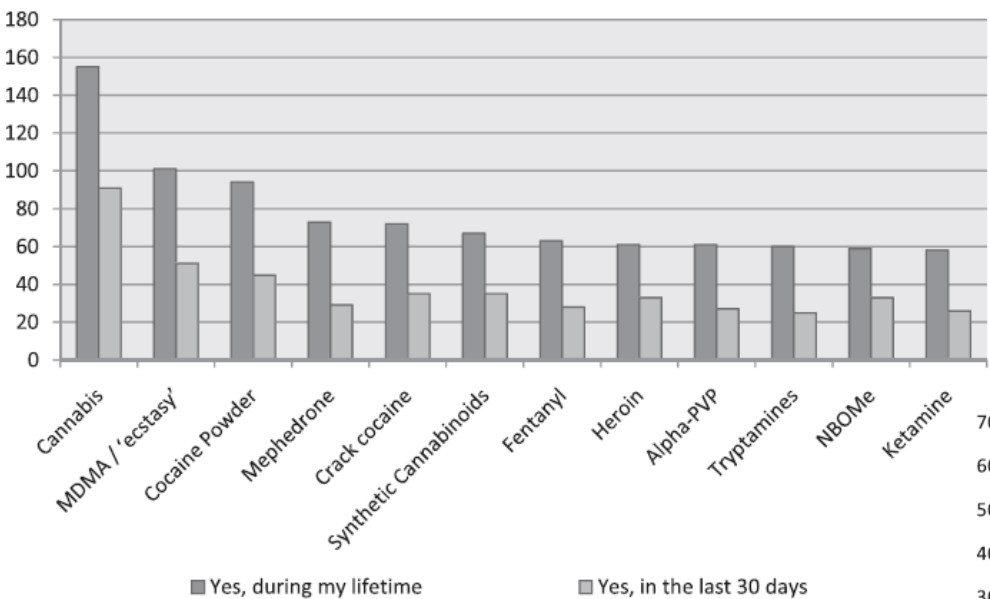
Adverse effects	n (ratio)
Tachycardia	53 (0.914)
Mydriasis	31 (0.534)
Somnolence	16 (0.276)
Nausea	16 (0.276)
Vomiting	16 (0.276)
Agitation	16 (0.276)
Dizziness	10 (0.172)
Disorientation	9 (0.155)
Chest pain	4 (0.069)
Dyspnoea	4 (0.069)
Loss of consciousness	2 (0.034)
Short-term memory loss	2 (0.034)
Paraesthesia	2 (0.034)
Muscle cramps	2 (0.034)

Arh Hig Rada Toksikol 2018;69:178-185

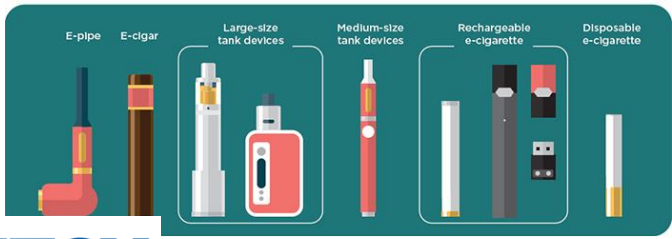
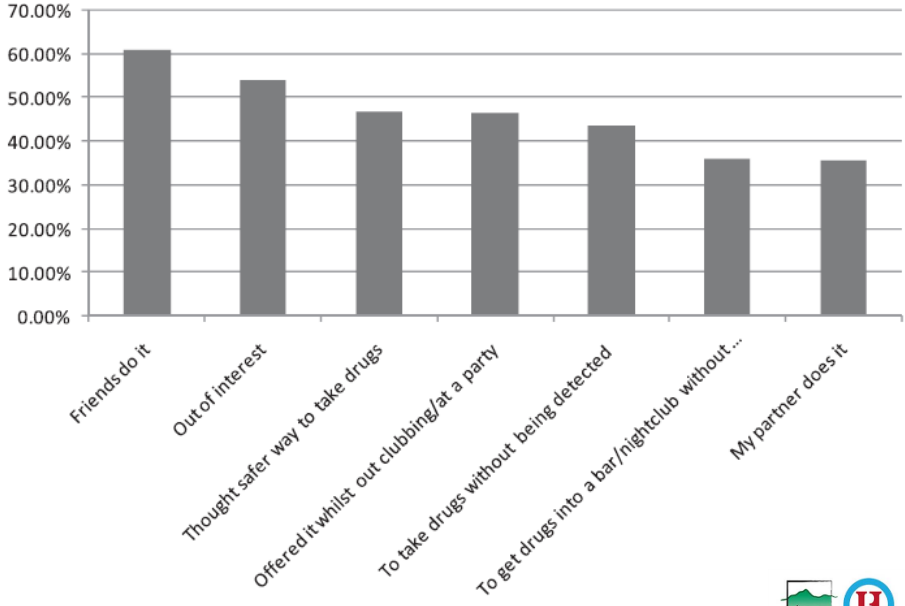


Supraventricular tachycardia and acute confusion following ingestion of e-cigarette fluid containing AB-FUBINACA and ADB-FUBINACA: a case report with quantitative analysis of serum drug concentrations. Clinical Toxicology, DOI: 10.1080/15563650.2017.1307385

NUOVE MODALITA' DI CONSUMO



2501 intervistati, 13.6% hanno usato nella vita un ENDS per *svapare* NPS



IL PAZIENTE PSICHIATRICO

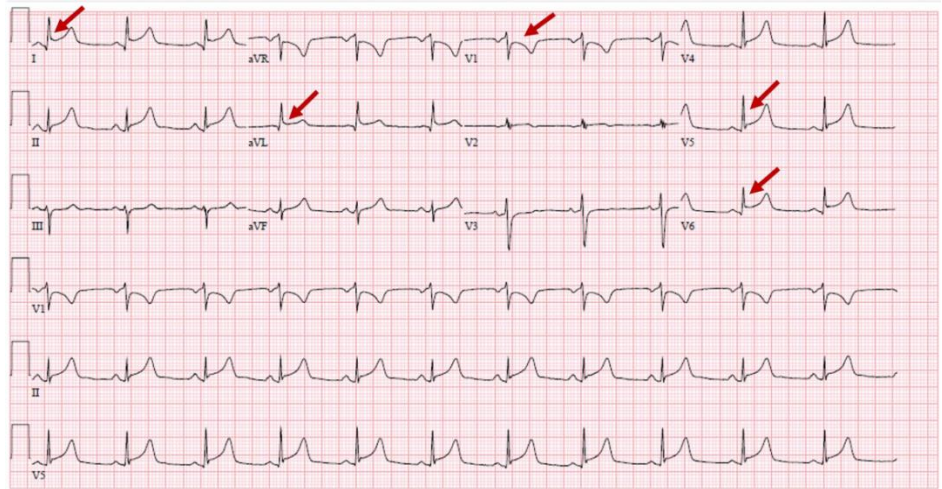
HALLUCINOGEN PERSISTING PERCEPTION DISORDER SPICEOPHRENIA

Drug	NC user group	SC user group	BSI category	NC 95% CI	SC 95% CI	<i>p</i>
Natural cannabis	100.0%	81.5%	Somatization	0.23–0.36	0.61–0.87	<0.001
Amphetamines	18.7%	31.3%	Obsessive-compulsive	0.49–0.72	1.20–1.53	<0.001
Cocaine/crack	9.0%	15.4%	Interpersonal sensitivity	0.30–0.49	0.77–1.10	<0.001
Tranquilizers	9.3%	19.2%	Depression	0.43–0.70	1.05–1.39	<0.001
Ecstasy/MDMA	5.4%	9.3%	Anxiety	0.24–0.42	1.00–1.32	<0.001
LSD/other hallucinogens	4.8%	7.5%	Hostility	0.15–0.28	0.58–0.86	<0.001
Magic mushrooms	0.7%	4.2%	Phobic anxiety	0.19–0.36	0.77–1.10	<0.001
GHB/GBL	0.0%	1.9%	Paranoid ideation	0.17–0.28	0.75–1.05	<0.001
Ketamine	2.0%	8.1%	Psychoticism	0.27–0.45	0.67–0.98	<0.001
Amyl nitrate/poppers	4.1%	1.4%				
<i>Salvia divinorum</i>	0.0%	8.8%				
Nitrous oxide/laughing gas	4.1%	5.6%				
Methylone	4.6%	3.8%				

TOSSICITÀ DA CANNABIS

Table 3 Clinical features in the 35 non-fatal lone-cannabis cases

Clinical feature	Occurrence as the only clinical feature	Occurrence with other clinical features
Agitation/aggression	4	4
Psychosis	4	3
Anxiety	0	7
Vomiting	4	2
Chest pain	1	3
Palpitations	0	3
Hallucinations	0	3
Seizures	1	1
Hypertension	0	2
Dyspnoea	0	2
Headache	1	1



BMJ Case Rep 2018.



J. Med. Toxicol. (2015) 11:415–421

COCAINA: IL PAZIENTE CARDIOLOGICO

Effects of cocaine on the heart

Arrhythmias

Inhibition of sodium channels: Increased heart rate and acidity
Inhibition of potassium channels: Prolongation of QT interval, early afterdepolarization, and ventricular tachyarrhythmia

Acute myocardial infarction (MI)

(Low dose)

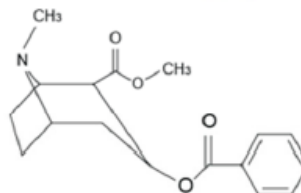
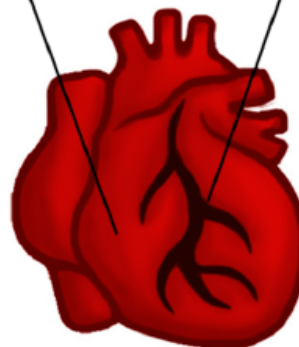
Increased heart rate, blood pressure, and myocardial contractibility
Coronary spasm/vasoconstriction and platelet adherence/thrombosis
Increased myocardial oxygen demand and decreased myocardial oxygen supply: Imbalance between oxygen supply and demand

(High dose)

Blockage of sodium transport and norepinephrine uptake in the myocardium: Decreased left ventricular contractibility and prolongation of QRS and QT intervals
Vessel damages/ruptures and thrombosis

Cardiomyopathy

- Non-ischemic myocardial depression: Dilated cardiomyopathy due to deprived myocardial oxygen supply
- Left ventricular hypertrophy
- Catecholamine toxicity: Myocarditis



Effects of cocaine on blood vessels

Acute hypertension and coronary spasm

Inhibition of norepinephrine reuptake
Increased vasoconstriction by increased endothelin-1, impaired vasorelaxation, inhibited NO synthase, impaired intracellular calcium handling, and inhibited sodium/potassium channels
Platelet aggregation/blood clots

Atherosclerosis

Impaired NO release
Increased levels of cell adhesion molecules, low-density lipoprotein migration, leukocyte migration, and intimal smooth muscle cells within the coronary artery wall

Coronary artery disease

- Vasoconstriction of coronary artery and vasospasm by stimulating adrenergic receptor
- Promoted intracoronary thrombosis
- Accelerated atherosclerosis

Cocaine (C₁₇H₂₁NO₄)

- Tropane alkaloid compound from *Erythroxylon coca*
- 18.2 million cocaine users in 2016
- Administration through smoking, intravenous injection, inhalation, or oral application
- Deleterious effects on the cardiovascular system

COCAINA: IL PAZIENTE CARDIOLOGICO

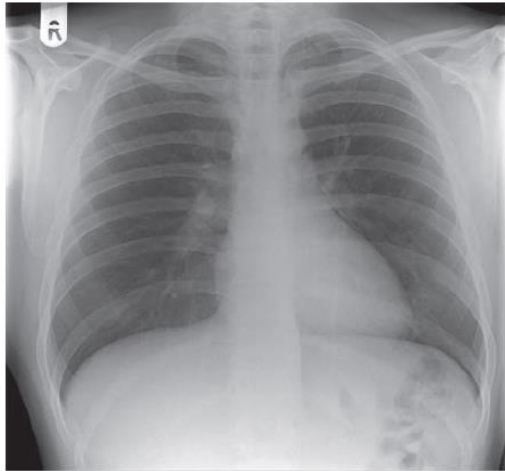
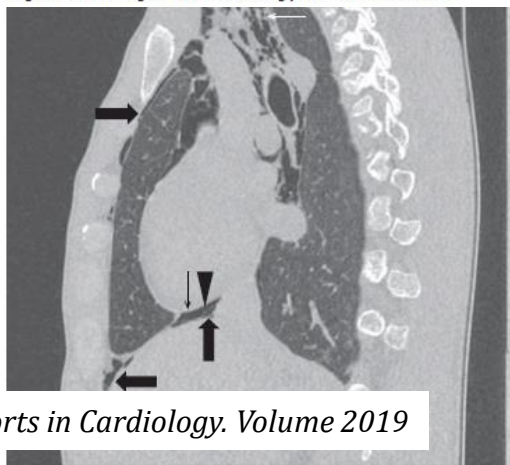


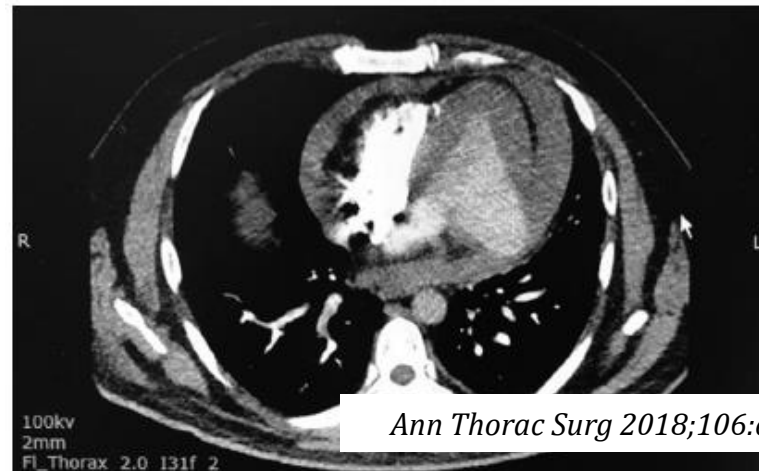
Fig 2. Chest radiogram demonstrating pneumomediastinum.



Clinical Medicine 2019 Vol 19, No 4: 321-4



Case Reports in Cardiology. Volume 2019



Ann Thorac Surg 2018;106:e227-9

TOSSICITÀ DA COCAINA

Figure 1. MRI of thoracic spine illustrating area of infarction.



Rhode Island medical journal
2018, 101, 28-29

*Crack lung: A
case of acute pulmonary cocaine
toxicity. Lung India 2019;36:370-1*

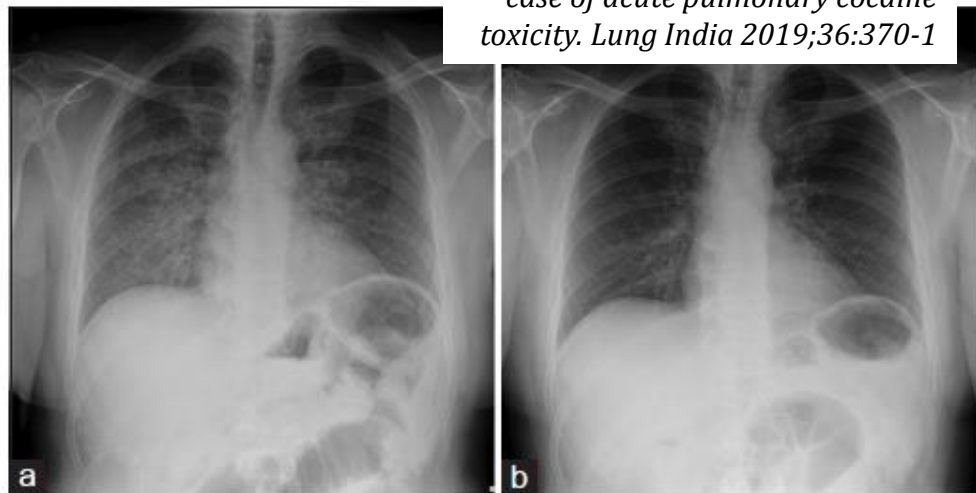
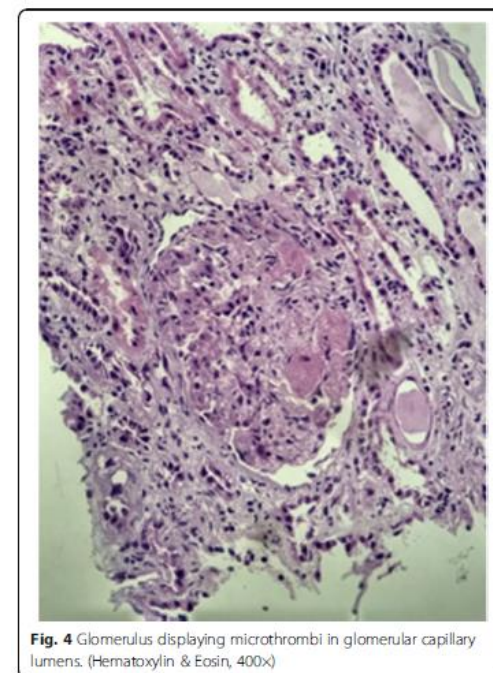
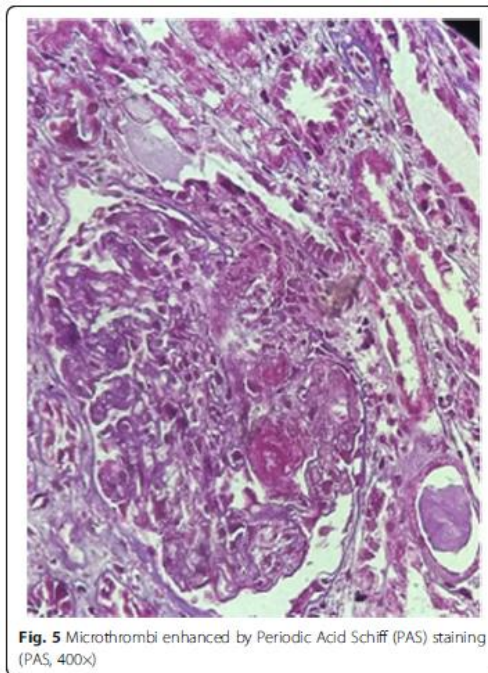
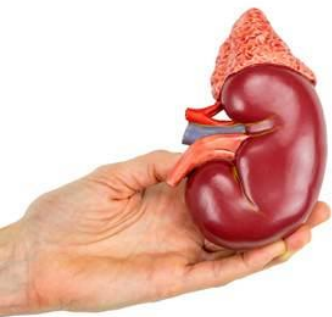
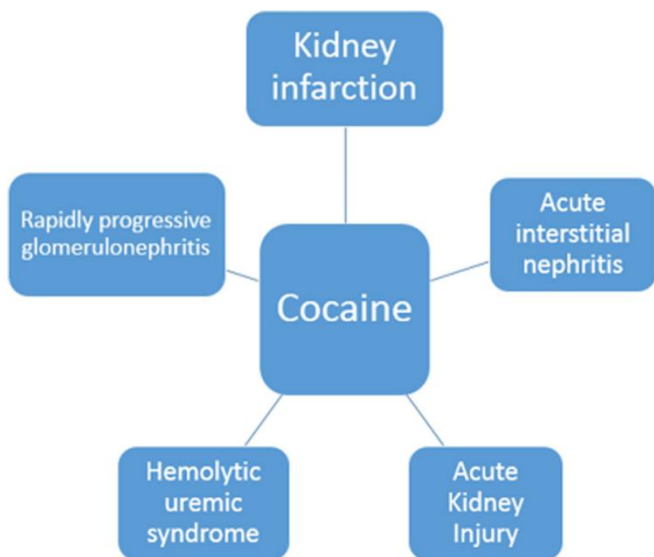


Figure 1: (a) Chest radiograph of the patient on admission showing diffuse alveolar infiltrates (b) follow-up chest radiograph 48 h after admission with marked radiologic improvement

TOSSICITÀ DA COCAINA



IL PAZIENTE CON QUADRI CLINICI MISTI

Clinical features of patients exposed to 2-oxo-PCE.

Clinical features	All episodes ^a	2-Oxo-PCE only ^b
Nervous system		
Impaired consciousness	44 (79%)	21 (84%)
Confusion	37 (66%)	15 (60%)
Abnormal behaviour	22 (39%)	11 (44%)
Agitation	10 (18%)	5 (20%)
Aggressive behaviour	9 (16%)	6 (24%)
Loss of consciousness	9 (16%)	5 (20%)
Convulsion	7 (13%)	4 (16%)
Drowsiness	7 (13%)	4 (16%)
Unstable emotion	7 (13%)	2 (8%)
Psychotic symptoms	5 (9%)	4 (16%)
Dizziness	5 (9%)	1 (4%)
Nystagmus	4 (7%)	1 (4%)
Unsteady gait	2 (4%)	1 (4%)
Cardiovascular system		
Hypertension ^c	41 (73%)	20 (80%)
Tachycardia ^d	25 (45%)	10 (40%)
Others		
Hyperthermia ^e	8 (14%)	4 (16%)
Rhabdomyolysis ^f	6 (11%)	2 (8%)

^a Data for all poisoning episodes including co-ingestion cases (n=56).

^b Data for poisoning episodes involving solely 2-oxo-PCE use (n=25).



SINDROME ASTINENZIALE

Takotsubo cardiomyopathy associated with buprenorphine precipitated withdrawal *Clinical toxicology, 2018*

Opioid Withdrawal Presenting as Delirium and Role of Buprenorphine: A Case Series *Indian J Psychol Med. 2017 Sep-Oct; 39(5): 665–667*

A Case of Rhabdomyolysis Associated With Severe Opioid Withdrawal *The American Journal on Addictions, 24: 400–402, 2015*

SINDROME ASTINENZIALE

Case Report

Delirium and High Creatine Kinase and Myoglobin Levels Related to Synthetic Cannabinoid Withdrawal

Day	Psychiatric evaluation	Biochemical parameters					Treatment	
		CK ¹	CK-MB ²	MB ³	AST ⁴	SC-1 ⁵		SC-2 ⁶
1	Manic symptoms (euphoria, irritable mood, logorrhoea, delusion)	796	48,4		39	1,5	2,3	Haloperidol 10 mg/d, quetiapine 400 mg/d, risperidone 2 mg/d, diazepam 5 mg/d
2	Manic symptoms							Quetiapine 300 mg/d, risperidone 2 mg/d
3	Manic symptoms							Quetiapine 300 mg/d
4	Delirium symptoms NDRS:15	2571	66,4		67			5% dextrose 2000 cc/d, risperidone 2 mg/d, lorazepam 2,5 mg/d
5	Delirium symptoms NDRS:29	4267 ↑	220	708	166	7,22	8,08	Lorazepam 9,5 mg/d, 5% dextrose 1500 cc/d, 0,9% isotonic 1500 cc/d Haloperidol 10 mg/d
5	Delirium symptoms NDRS:30	4267 ↑	130	564	140			Lorazepam 2,5 mg/d, diazepam 30 mg/d 5% dextrose 1500 cc/d, 0,9% isotonic 1500 cc/d
7	Delirium symptoms NDRS:12	2049	56,9	262	96			Diazepam 20 mg/d 5% dextrose 1500 cc/d, 0,9% isotonic 1500 cc/d Haloperidol 10 mg/d
8	Hyperthymia NDRS: 3	1429	43,7	157	77			Diazepam 20 mg/d 0,9% isotonic 500 cc/d

¹Creatine kinase, ²creatine kinase-MB, ³myoglobin, ⁴aspartate aminotransferase, ⁵synthetic cannabinoid-1 (Table 1), and ⁶synthetic cannabinoid-2 (Table 1);
↑ test results exceed the measurable values.

PAZIENTI CON DUS IN PS: LO STIGMA

In preda ai deliri della cocaina, ha dato in escandescenze facendo pure danni al Pronto soccorso

Tossicodipendente dà in escandescenze e fa danni al Pronto soccorso

Galliera, tossicodipendente spacca una mano a un infermiere del pronto soccorso

FONDI, NOTTE DI TERRORE AL PRONTO SOCCORSO: TOSSICODIPENDENTE DÀ IN ESCANDESCENZA

Vuole più metadone, giovane tossicodipendente semina il panico in ospedale

“Mi avete rubato il portafoglio”, gambiano tossicodipendente devasta pronto soccorso

Ladispoli, coniugi tossicodipendenti creano il panico al pronto soccorso: prima minacciano il medico, poi provano a rubare la pistola alla guardia giurata

PAZIENTI CON DUS IN PS: LO STIGMA

MARCO, 19 ANNI. ASTINENZA PRECIPITATA DA SUBOXONE

- È qui da 6 ore e non riesco a mandarlo a casa
- Continua a dire che ha male ma gli ho già fatto di tutto
- Si agita e agita anche la madre
- Io ho anche i pazienti con l'infarto da vedere
- Queste cose non le so fare e non dovrei farle io
- La psichiatra queste cose non le sa fare
- Posso dargli una martellata in testa?
- Il tossicologico non glielo faccio. Sono solo soldi buttati



PAZIENTI CON DUS IN PS: STIGMA

	Patients With COPD Who Smoke			Trauma Patients Who Are Intoxicated			Patients With Poorly Controlled Diabetes Who Have a Poor Diet			Obese Patients With Back Pain			Patients With Substance Use Who Have Pain		
	% Disagree (N)	% Neutral (N)	% Agree (N)	% Disagree (N)	% Neutral (N)	% Agree (N)	% Disagree (N)	% Neutral (N)	% Agree (N)	% Disagree (N)	% Neutral (N)	% Agree (N)	% Disagree (N)	% Neutral (N)	% Agree (N)
Working with patients like this is satisfying	26% (13)	24% (12)	50% (25)	44% (22)	30% (15)	26% (13)	43% (21)	29% (14)	29% (14)	48% (24)	34% (17)	18% (9)	70% (35)	22% (11)	8% (4)
Insurance plans should cover patients like this to the same degree that they cover patients with other conditions	18% (9)	6% (3)	76% (38)	12% (6)	8% (4)	80% (40)	12% (6)	12% (6)	76% (37)	6% (3)	12% (6)	82% (41)	8% (4)	16% (8)	76% (38)
There is little I can do to help patients like this	78% (39)	2% (1)	20% (10)	80% (40)	12% (6)	8% (4)	73% (26)	6% (3)	20% (10)	60% (30)	14% (7)	26% (13)	42% (21)	16% (8)	42% (21)
I feel especially compassionate towards patients like this	30% (15)	36% (18)	34% (17)	44% (22)	32% (16)	24% (12)	31% (15)	37% (18)	33% (16)	33% (16)	43% (21)	24% (12)	52% (26)	30% (15)	18% (9)
Patients like this irritate me	54% (27)	22% (11)	24% (12)	24% (12)	24% (12)	52% (26)	49% (24)	16% (8)	35% (17)	56% (28)	16% (8)	28% (14)	18% (9)	28% (14)	54% (27)
I wouldn't mind getting up on call nights to care for patients like this	19% (9)	19% (9)	62% (29)	31% (15)	10% (5)	58% (28)	22% (10)	35% (16)	43% (20)	39% (18)	20% (9)	41% (19)	56% (27)	17% (8)	27% (13)
Treating patients like this is a waste of medical dollars	76% (38)	12% (6)	12% (6)	70% (35)	14% (7)	16% (8)	80% (39)	6% (3)	14% (7)	78% (39)	18% (9)	4% (2)	64% (32)	22% (11)	14% (7)
Patients like this are particularly difficult for me to work with	78% (39)	12% (6)	10% (5)	52% (26)	18% (9)	30% (15)	63% (31)	14% (7)	22% (11)	47% (23)	12% (6)	41% (20)	20% (10)	8% (4)	72% (36)
I can usually find something that helps patients like this feel better	4% (2)	8% (4)	88% (43)	8% (4)	18% (9)	74% (37)	8% (4)	13% (6)	79% (38)	10% (5)	10% (5)	80% (40)	44% (22)	16% (8)	40% (20)
I enjoy giving extra time to patients like this	20% (10)	49% (24)	31% (15)	40% (20)	48% (24)	12% (6)	22% (11)	47% (23)	31% (15)	35% (17)	49% (24)	16% (8)	58% (29)	32% (16)	10% (5)
I prefer not to work with patients like this	66% (33)	26% (13)	8% (4)	48% (24)	38% (19)	14% (7)	55% (27)	35% (17)	10% (5)	50% (25)	36% (18)	14% (7)	15% (7)	31% (15)	54% (26)



PAZIENTI CON DUS IN PS: DIAGNOSTICA



RAPID COMMUNICATION

Hospital emergency presentations and acute drug toxicity in Europe

Update from the Euro-DEN Plus research group and the EMCDDA
August 2016

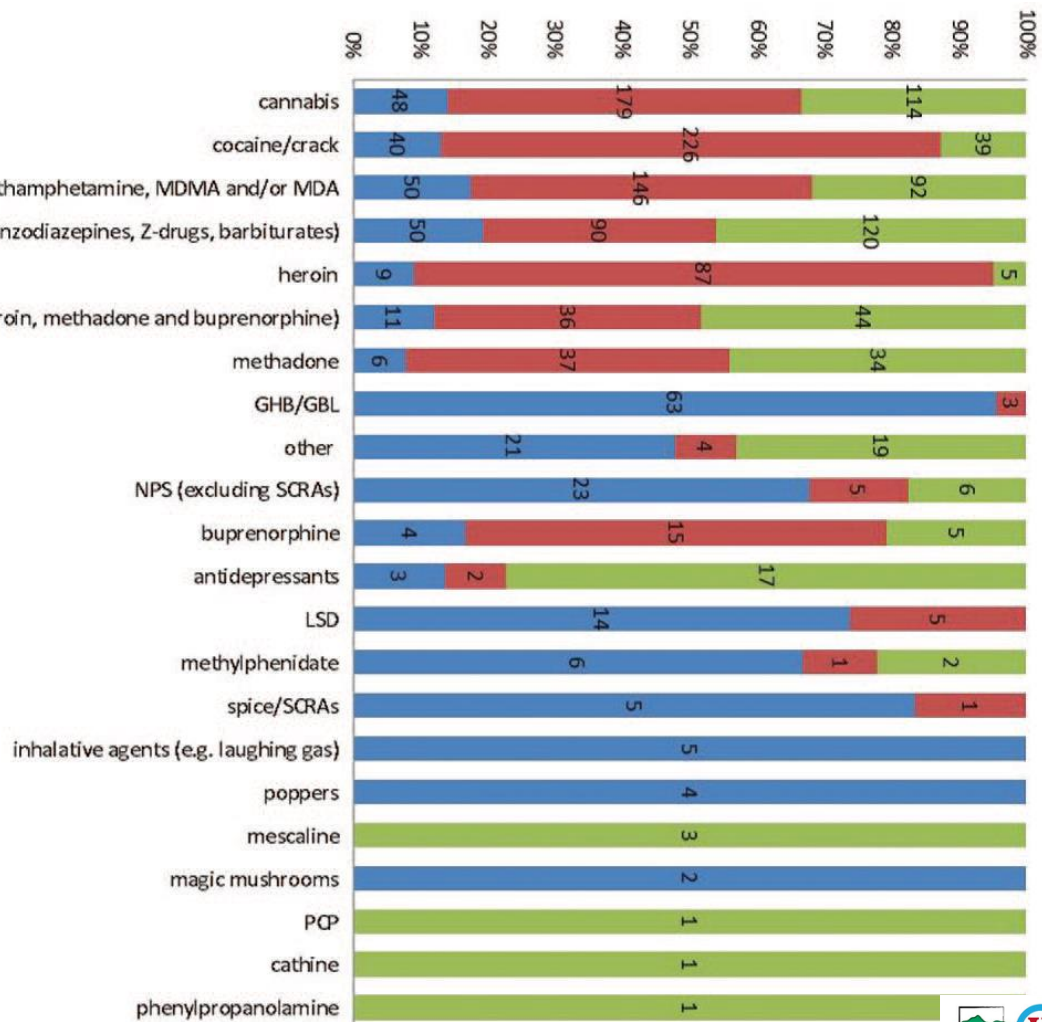


2 anni, 10.956 casi,
15% conferma
analitica (831 casi
inclusi)

■ only self-reported

■ self-reported & analytically detected

■ only analytically detected



Liakoni et al. Medicine (2018) 97:5



AZIENDA SANITARIA
LOCALE DI BIELLA

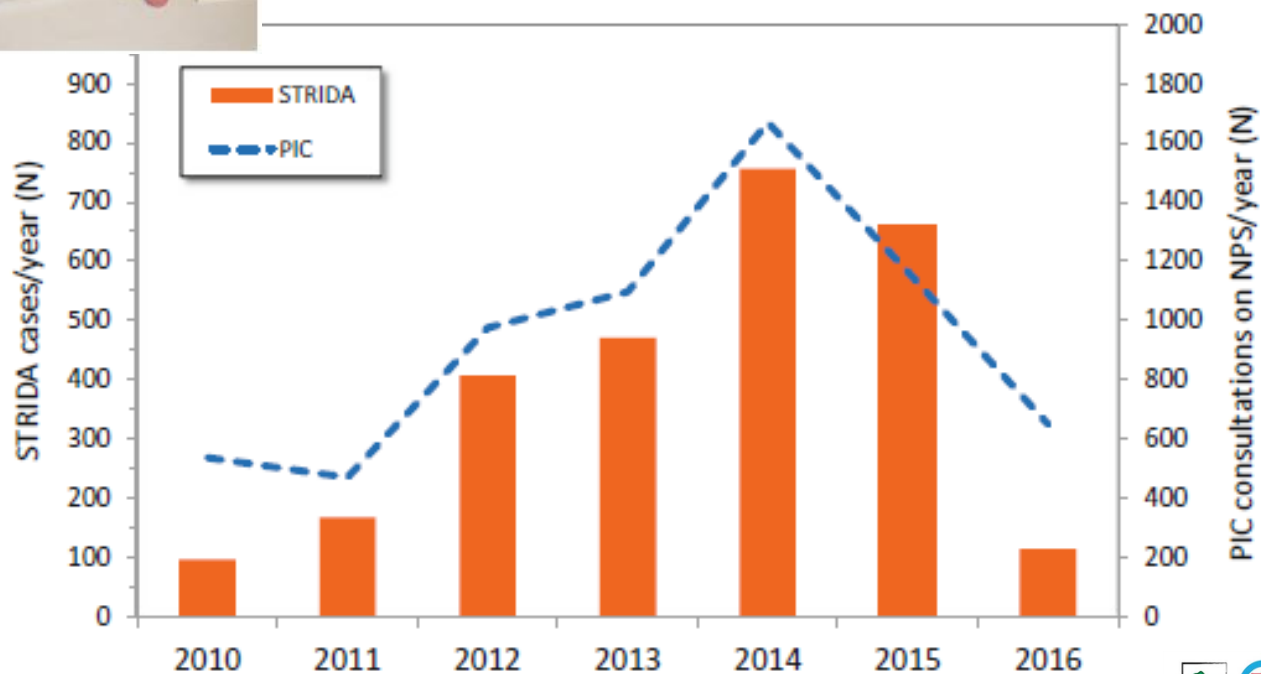


SITOX
Società Italiana di Tossicologia

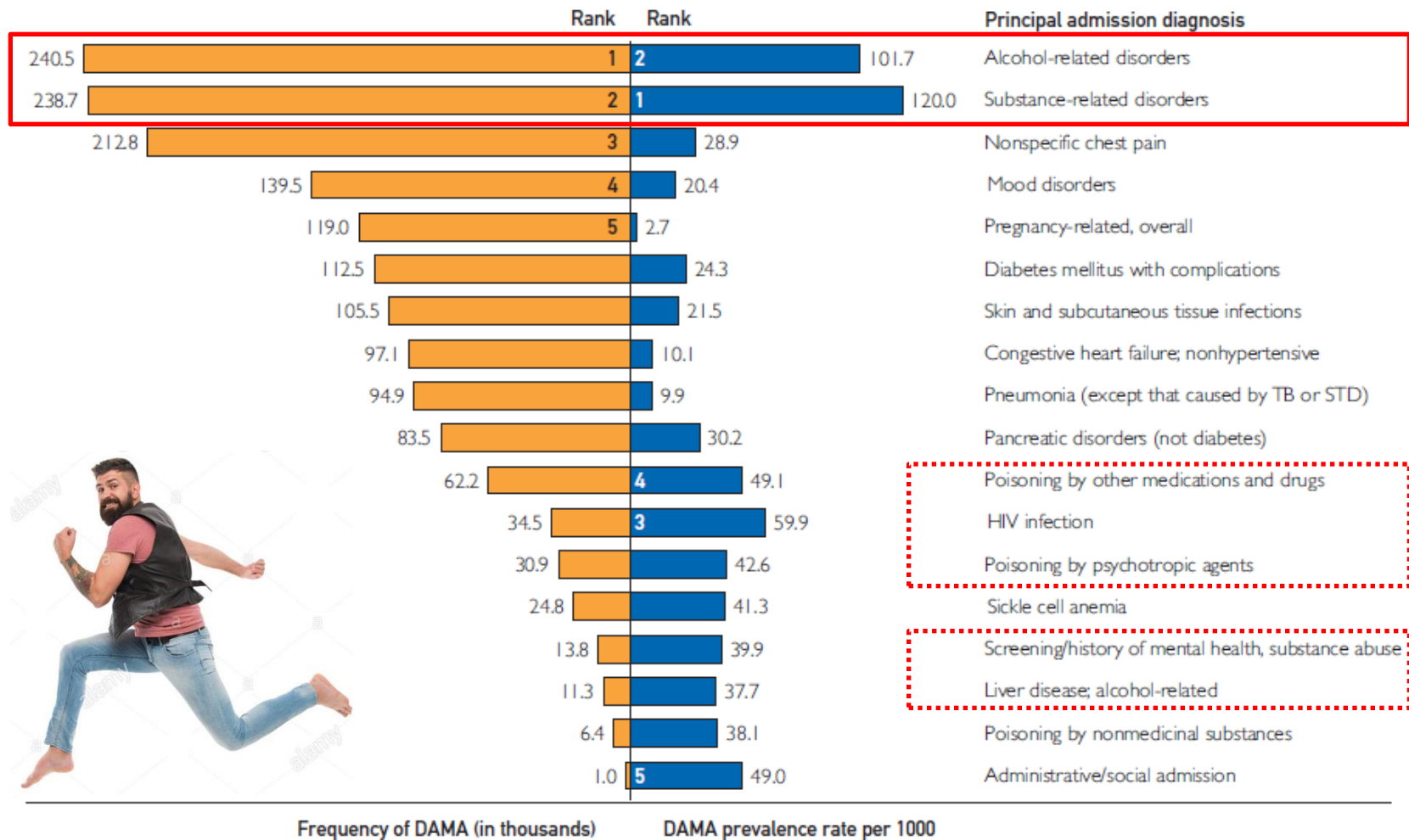
PAZIENTI CON DUS IN PS: DIAGNOSTICA



6 anni di studio
2600 pazienti inclusi
57% di età \leq 25 anni



DIMISSIONI CONTRO PARERE MEDICO



DIMISSIONI CONTRO PARERE MEDICO

Table 1 Characteristics of self-discharging patients

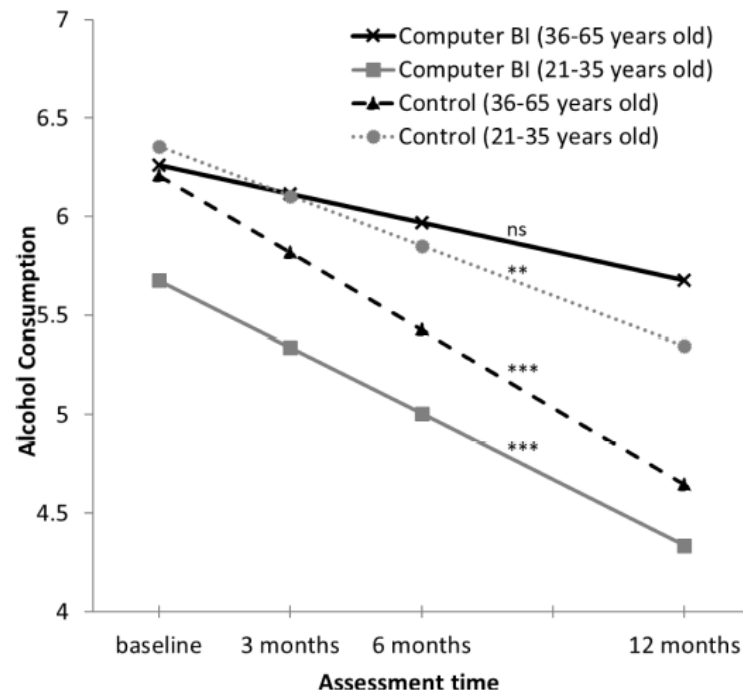
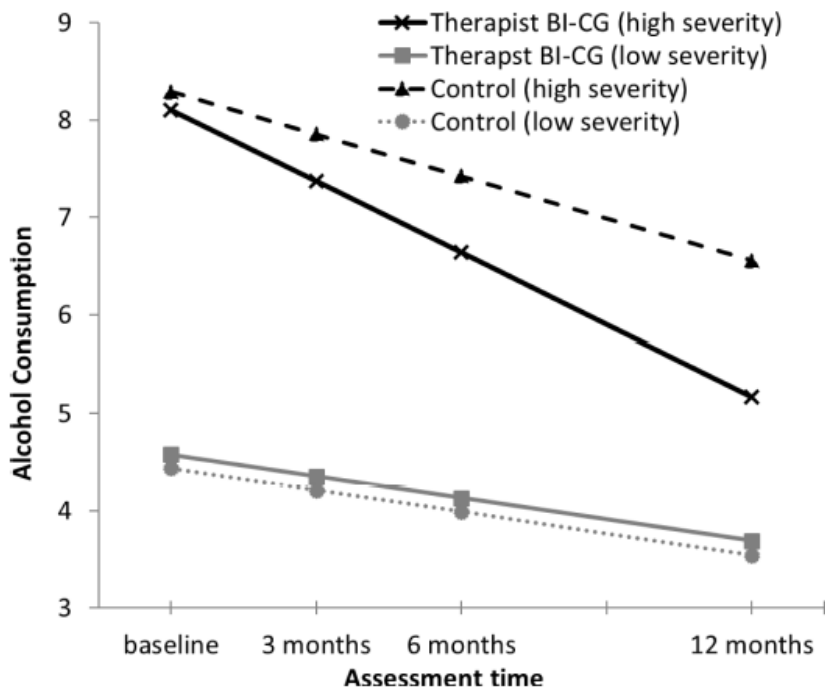
	Self-dischargers n (%)	Non-self-dischargers n (%)	p-value
Males	184 (69)	952 (65)	0.21
Age ^a	39 (28–50)	32 (23–46)	< 0.001
Main toxic agent			
<i>Ethanol</i>	143 (54)	829 (57)	0.43
<i>Opioids</i>	82 (31)	282 (19)	< 0.001
<i>Stimulants</i>	12 (5)	93 (6)	0.31
<i>GHB</i>	11 (4)	74 (5)	0.63
<i>Benzodiazepines</i>	12 (5)	132 (9)	0.020
<i>Other</i>	6 (2)	55 (4)	0.30
Suicide attempt ^b	14 (5)	116 (8)	0.17
Severe mental illness	33 (12)	150 (10)	0.34
Homeless	20 (8)	63 (4)	0.035
Two or more poisonings ^c	89 (33)	186 (13)	< 0.001
Three or more poisonings ^c	56 (21)	62 (4)	< 0.001
Death ^d	9 (3.4)	25 (1.7)	0.12
Total	266 (100)	1465 (100)	

Pazienti ad alto rischio in situazioni ad alto rischio

6-17% (vs 1-3% popolazione generale)

- Rischio 3-5 volte maggiore di intossicazioni ripetute
- Mortalità a breve termine raddoppiata
- Carenze comunicative (linguaggio difficile, messaggi non coerenti, maleducazione)
- Patologie psichiatriche, problematiche sociali

PAZIENTI CON DUS IN PS: OPPORTUNITÀ



DRUNKOREXIA/ALCOHOLIMIA

Table 1. Proposed diagnostic criteria for “alcoholimia”.

DSM-V1 – Diagnostic Criteria for Alcoholimia: A subcategory of OSFED

- A. Patient partakes in high-risk drinking, as defined by the National Institute on Alcohol Abuse and Alcoholism (4+ drinks for women and 5+ drinks for men within a 2-hour period).
- B. Self-evaluation is unduly influenced by body shape and weight.
- C. Patient engages in at least one (1) of the following compensatory behaviors an average of once per month for at least three (3) consecutive months:
 - 1. Skips meals or severely restricting calories (consuming less than 1,200 calories in a day) to control weight
 - 2. Exercises for 2 hours or more in a day to compensate for the calories consumed from drinking or in anticipation of drinking
 - 3. Uses of stimulants to control weight
 - 4. Uses laxatives or diuretics to control weight
 - 5. Self-induced vomiting after or during drinking
 - 6. Drinking large amounts with the intention of making oneself vomit
 - 7. Restricting calories before or during consuming alcohol in an attempt to intensify intoxication or become intoxicated quicker
- D. The high-risk drinking and inappropriate compensatory behaviors both occur, on average, at least once a month for three (3) consecutive months.
- E. The disturbance does not occur exclusively during periods of bulimia nervosa.
- F. The individual exhibits significant distress and impairment.

Specify current severity:

The minimum level of severity is based on the frequency of inappropriate compensatory behaviors (see below). The level of severity may be increased to reflect other symptoms and the degree functional disability.

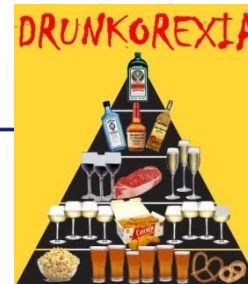
Mild: An average of 1–3 episodes of inappropriate compensatory behaviors per month.

Moderate: An average of 4–7 episodes of inappropriate compensatory behaviors per month.

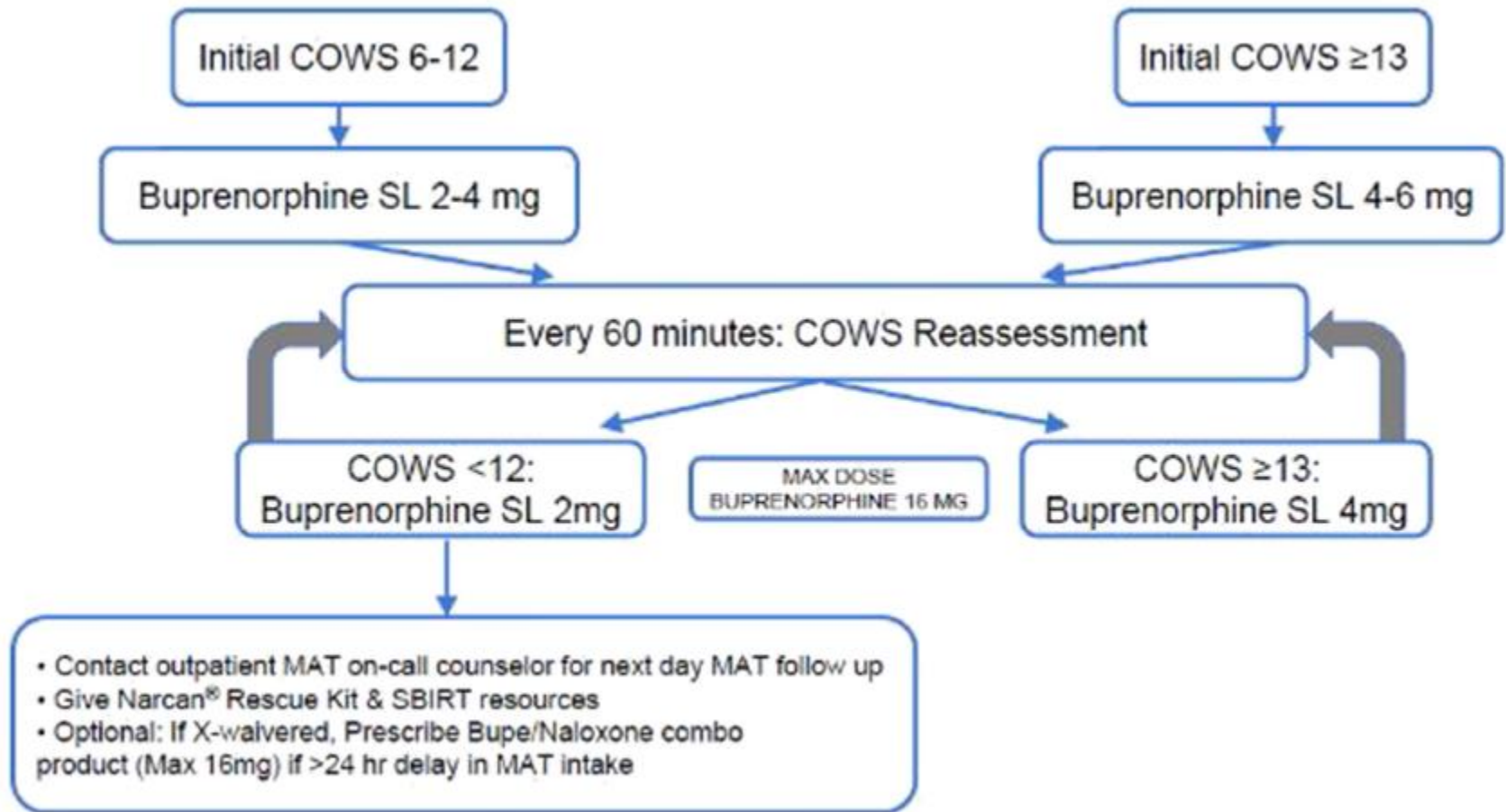
Severe: An average of 8–13 episodes of inappropriate compensatory behaviors per month.

Extreme: An average of 14 or more episodes of inappropriate compensatory behaviors per month.

Proposed diagnostic criteria for *Drunkorexia*: Clarifying a misunderstood phenomenon.



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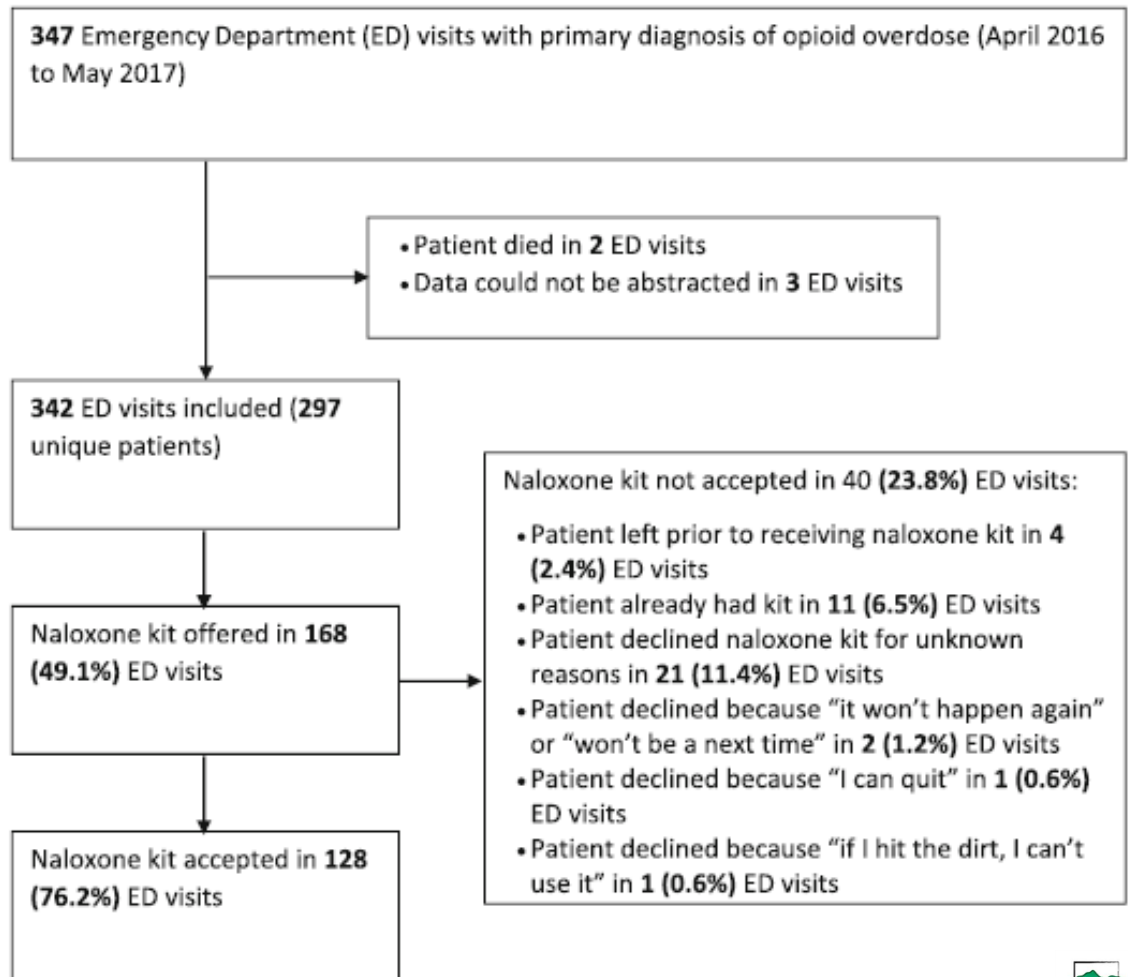


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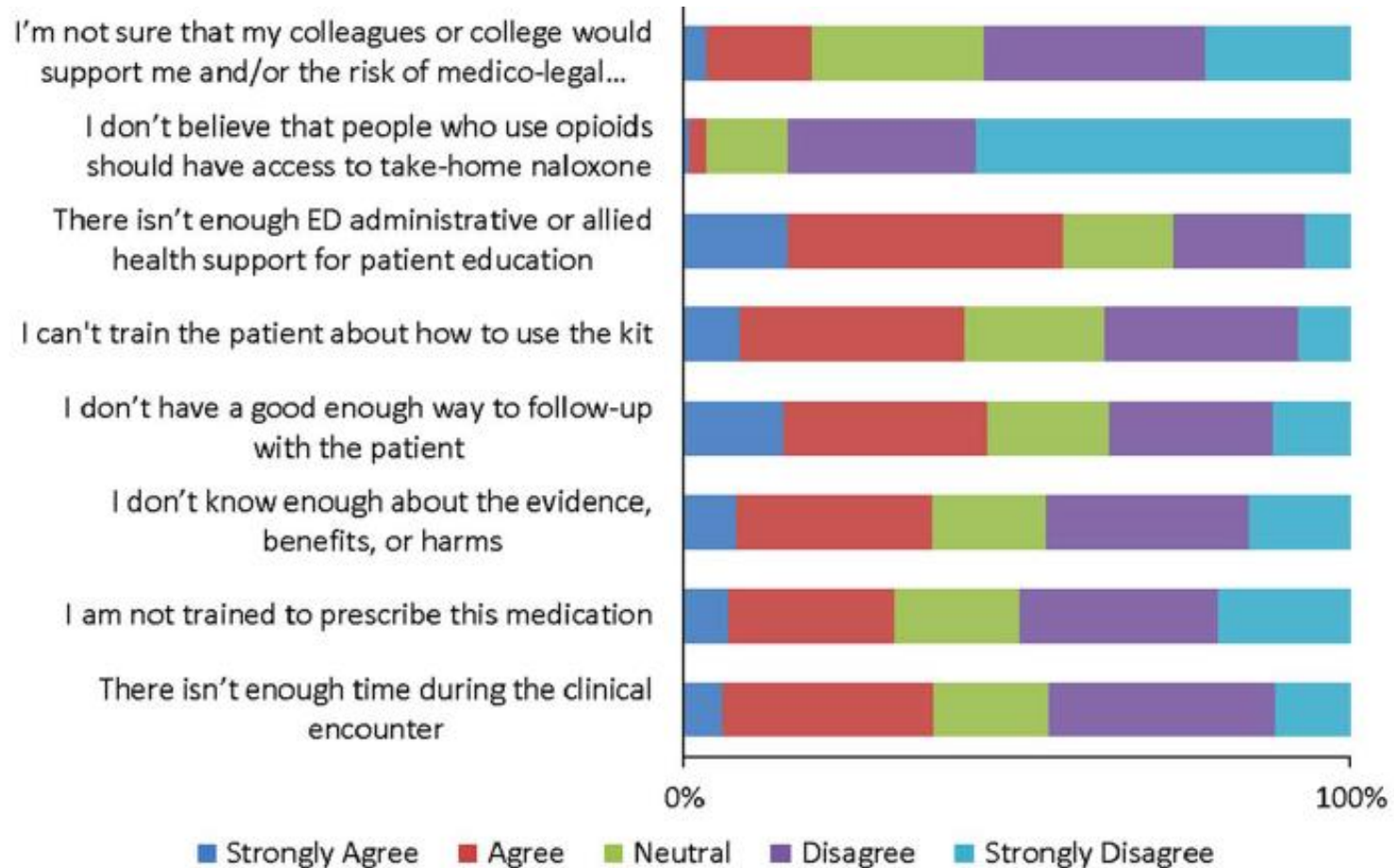
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Preventing opioid overdose deaths with take-home naloxone

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CONCLUSIONI

ANNOTATED GUIDANCE AND RECOMMENDATIONS FOR THE ROLE AND ACTIONS OF EMERGENCY MEDICAL SERVICES SYSTEMS IN THE CURRENT OPIOID AND DRUG-RELATED EPIDEMICS

REVIEW ARTICLE

Emergency Medicine Research Priorities for Early Intervention for Substance Use Disorders

ORIGINAL CONTRIBUTION

Emergency Department-based Opioid Harm Reduction: Moving Physicians From Willing to Doing

CONCLUSIONI



- Varietà quadri clinici
- Necessità diagnostiche
- Superamento dello stigma
- Necessità formative