



17th St. & Constitution Avenue N.W.
Washington, D.C. 20006
United States of America

Organization of American States

P. 202.458.3000
www.oas.org

INTER-AMERICAN DRUG ABUSE
CONTROL COMMISSION
CICAD

Secretariat for Multidimensional Security

FIFTY-FIRST REGULAR SESSION

May 9 - 11, 2012
Washington, D.C.

OEA/Ser.L/XIV.2.51

CICAD/doc.1951/12

8 May 2012

Original: Español

SMOKEABLE COCAINE IN SOUTH AMERICA
DR. ANTONIO PASCALE PRIETO
REDLA, URUGUAY



Smokeable Cocaine in South America

Dr. Antonio Pascale Prieto

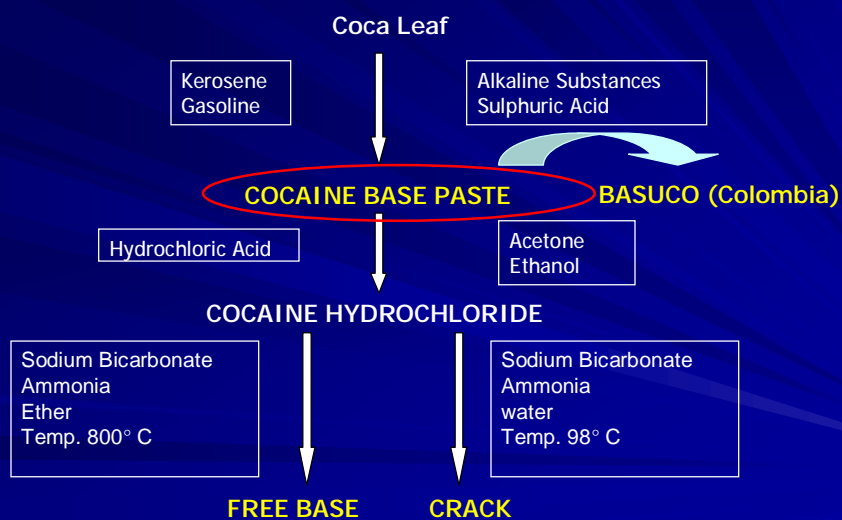
M.D., Toxicologist – REDLA
Montevideo, Uruguay

LI CICAD Regular Session
CICAD - OAS, Washington DC . USA
May 9-11, 2012

Presentation

- Smokeable Cocaine Substances
- The Epidemiology of Cocaine Base Paste (CBP) consumption
- Profile of the CBP user
- CBP: toxicology – health impact
 - Composition
 - Toxicity
 - Addictive Potential
 - Clinical Aspects
 - Chronic complications
- Therapeutic Approach

SMOKEABLE COCAINE



Modificado de Castaño, 2000

Epidemiology of CBP consumption

Surveys indicate low prevalence of consumption...



... however impact is high.
(demand for treatment,
consultations related to acute and chronic effects)

Consumption in the General Population

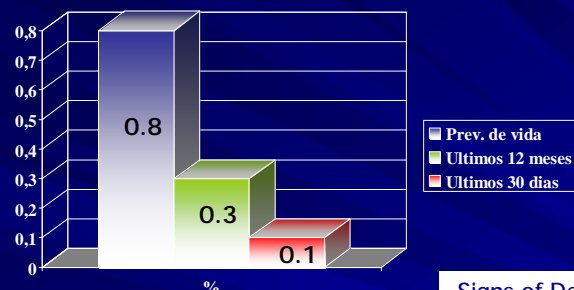
Table 19. *Prevalence of Cocaine Base Paste Use in the General Population age 12-64 (%)*

Country	Lifetime	Past Year	Past Month
Argentina (2008)	0.40	0.20	0.10
Chile (2008)	3.10	0.70	0.40
Colombia (2008)	1.09	0.17	0.10
Ecuador (2007)	0.72	0.13	0.10
El Salvador (2005)	0.30	0.08	0.08
Guatemala (2005)	0.26	0.08	-
Nicaragua (2006)	0.50	-	-
Panama (2003)	0.24	0.14	0.08
Paraguay (2003)	0.14	0.08	0.02
Peru (2006)	1.30	0.38	0.16
Uruguay (2006)	0.80	0.30	0.12

Sources: NDCs and NDOs in member states.
Note: Table displays data available from individual countries. Countries without comparable data may not be represented. Canada and the USA do not collect data on CBP use.
Numbers in () indicate year of study.

Report on Drug Use in the Americas. OEA. CIDAD. OEA (2011)

IV National Household Survey (2006) – Consumption of CBP in Uruguay



- Signs of Dependency in 57 % of consumers
- Three out of four CBP users are males
- Average age of first use: 20 years.
- History of inhalant abuse (60 %)

8% in highly vulnerable, peripheral areas in Montevideo

Source: Uruguayan Observatory on Drugs. National Secretariat on Drugs

SECOND CENSUS OF MONTEVIDEO AND FIRST NATIONAL CENSUS OF TREATMENT CENTERS AND USERS IN TREATMENT

- In October 2010 25 centers in Montevideo and 9 Centers in the countries' interior were studied

	Data by individual registry	
	No.	%
TOTAL COUNTRY		
Public	805	63.1
Private or NGO	337	26.4
Private with state sponsored financial support	106	8.3
Private with community support and international financing	27	2.2
Total	1275	100.0

1275 users in treatment.

Source: OUD (SND)

	Public	Private or NGO	Private w/ state sponsored financial support	Private w community support and international financing	Total Montevideo Drug of greatest impact
	%	%	%	%	%
Alcohol	6,8	17,7	9,2	11,8	10
Marijuana	5,1	14,5	1,3	17,6	7,5
CBP	73,2	30,1	67,1	64,7	61
Cocaine Hcl	13,6	32,1	15,8	5,9	18,6
others	1,5	5,6	6,6	0	2,9
Total	100,0	100,0	100,0	100,0	100,0

Profile of CBP users

• Study carried out in the Information and reference center of the National Drug Network, "Yellow Doorway" (UOD, 2006)

- Majority male
- Average age 23 years, 37 % minors
- 90 % under 30 years of age
- Majority unmarried, unemployed
- Vast majority began high school (high school, technical school), but did not complete it
- Less than 20% have stable work or studies
- High % used to live with parents (less than 13 % living with own family)
- Half had received previous treatment with UPD
- 2/3 symptoms of a psychiatric condition
- 18.9 % violent behavior
- 58 % legal problems

Cocaine base paste. Practice and risk management among Uruguayan adolescents. IDES, JND, UNODC (2006)

Does a single profile exist?

Tabla 13. Distribución de N° Personas según Sustancia Principal de Consumo al Ingreso por Sexo

Sustancia	Hombres		Mujeres		Total	
	N	%	N	%	N	%
Pasta Base	3322	50,52	1388	50,84	4710	50,62
Cocaína	1254	19,08	439	16,06	1693	18,19
Alcohol	1094	16,63	456	16,72	1550	16,66
Marihuana	756	11,49	261	9,57	1017	10,93
Sedantes	84	1,28	153	5,61	237	2,55
Inhalantes	25	0,38	4	0,15	29	0,31
Crack	1	0,02	0	0	1	0,01
Heroína	1	0,02	0	0	1	0,01
Otros Opioides	21	0,32	14	0,51	35	0,38
Anfetaminas	5	0,08	7	0,26	12	0,13
Otros Estimulantes	3	0,05	1	0,04	4	0,04
Alucinógenos	3	0,05	0	0	3	0,03
Otros	6	0,09	7	0,26	13	0,14
Total	6577	100	2730	100	9305	100

Tabla 14. Distribución de N° Personas según Sustancia Principal de Consumo al Ingreso por Sexo

	< 20		20 - 25		26 - 34		35 - 44		45 - 64		> 64	
	N	%	N	%	N	%	N	%	N	%	N	%
Pasta Base	136	56	1170	60	1975	58	1114	45	307	27	1	3
Cocaína	26	11	297	15	661	19	522	21	185	16	2	5
Crack	0	0	0	0	0	0	1	0	0	0	0	0
Alcohol	20	8	170	9	413	12	530	21	398	35	16	43
Marihuana	56	23	299	15	313	9	222	9	120	11	6	16
Sedantes	3	1	7	0	40	1	72	3	102	9	12	32
Inhalantes	2	1	11	1	9	0	5	0	2	0	0	0
Heroína	0	0	0	0	0	0	0	0	1	0	0	0
Otros Opioides	0	0	5	0	13	0	8	0	9	1	0	0
Anfetaminas	0	0	2	0	2	0	5	0	3	0	0	0
Otros Estimulantes	0	0	0	0	2	0	0	0	2	0	0	0
Alucinógenos	0	0	1	0	1	0	1	0	0	0	0	0
Otros	0	0	0	0	4	0	1	0	8	1	0	0
Total	243	100	1962	100	3433	100	2481	100	1137	100	37	100

CBP: higher demand for treatment (Chile, 2010)

Treatment and Rehabilitation Section, CONACE. Technical Report 2010. Santiago, Chile.

COCAINE BASE PASTE

- Intermediate product in the production of cocaine
- White/brown powder, pungent odor
- Variable percentage of cocaine (40-85 %). (Castaño G, 2000)
- Alkaline, liposoluble
- Volitization and high temp. ➡ Smoked
- Dose (*chasqui, medio*): 0,1 – 0,5 g
"Tiza" (pack): 10 g



COCAINE BASE PASTE – Composition

- Toffoli et al. 1965
 - First analytic studies on cocaine base paste
 - Cocaine, ecgonine, anhydroecgonine
 - Variability (up to 70% cocaine)
- Elsohly, 1991
 - Samples of CBP from Colombia and Peru
 - Cocaine > 60 %
 - Contaminants (aromatic hydrocarbons, waste gas, manganese and potassium permanganate in Colombian samples)
 - Other coca leaf alkaloids (tropacocaine, cinnamoylcocaine cis-, trans-cinnamoylcocaine).

COCAINE BASE PASTE – Composition

- Elsohly, 1991
 - Differences in samples from Colombia and Peru
- Meickle et al. 2009
 - First preclinical study on CBP (Uruguay)
 - Cocaine (68 %)
 - Caffeine as adulterant (15 %)
 - Ecgonine, cis-cinnamoylcocaine, trans-cinnamoylcocaine
 - Impurities (0.1 a 9 %)
 - Absence of solvents

SMOKEABLE COCAINE in BRAZIL (Bastos et al. Addiction 2011)

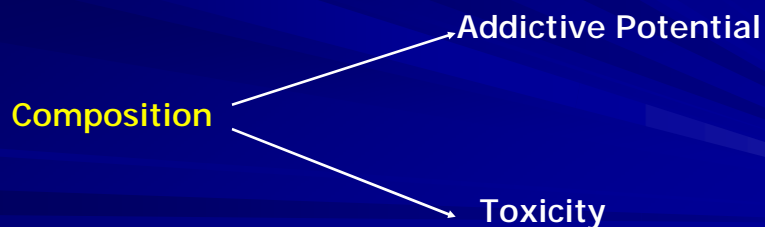
- **Crack Rocks**, derived from del hydrochloride with bicarbonate and sodium added
- **Cocaine paste (CBP)** smoked as free base
- **"Merla"**, base paste containing a high proportion of solvents and industrial products such as battery acid.
- **"Oxi"**, produced from residues or waste from coca paste, prepared with gasoline, kerosene and lime (calcium oxide).

CBP – Composition (Uruguay)

- Different from Crack (Europe , USA)
- Differences between samples of CBP analyzed in Colombia and Peru
- Similarities and differences between CBP in Uruguay, Argentina and crack presently consumed in Brazil

COCAINE BASE PASTE – Composition

“.... complex product from the chemical point of view, should not be assumed to have the same biological and toxicological properties as cocaine even though it is the largest alkaloid component ...”
Elsohly, 1991



COCAINE BASE PASTE Adulterants

- Cuts: talcum powder, sugar, mannitol, dipyron, crushed glass tube light ...
- Simile-cocaine:
 - Lidocaine
 - Caffeine
 - Horse Stimulant



Fuente: El Observador, 2011

COCAINE BASE PASTE Toxicity

Cocaine

Other Alkaloids?

Impurities

Adulterants

Combustion Products

Heat Injuries

COCAINE BASE PASTE - Mode of consumption

- Cocaine smoked in metal cans, hand-made pipes (metal and plastic), car antennae
- + Aluminum paper
- + Cigarette ashes
- Associated with marijuana (*basoco*) or tobacco (*tabasoco*)
- Poly-use (ethanol, marijuana, cocaine Hcl)



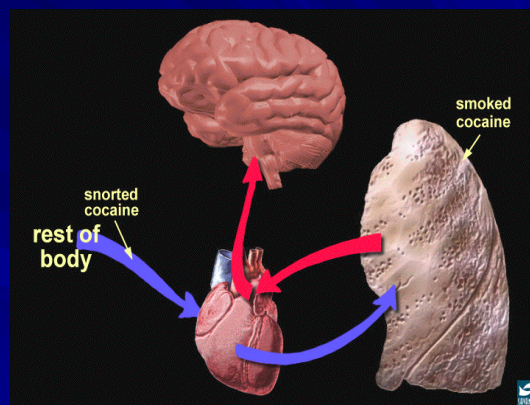
COCAINE BASE PASTE- Addictive Potential

Very intense High



Crash and dysphoria

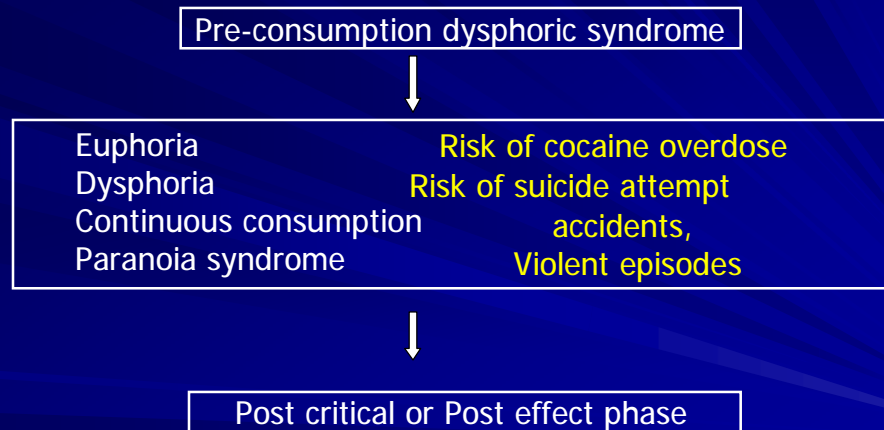
Rapid development of withdrawal symptoms (dependency)



Mode of Consumption (Meickle et al 2009)

COMPOSITION ? (Lopez Hill et al 2011)

COCAINE BASE PASTE – Acute Effects



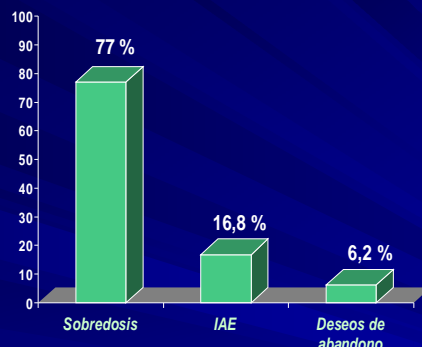
Jeri, 1978
Castaño, 2000

"Our first observations indicated [a minimum of] euphoria and pleasure experiences during intoxication; Indeed the patient said '[I] do not understand why [I] consumed coca paste' During the intoxication period [the user] experienced anxiety but above all an indescribable compulsion to continue using. We also observed an increasingly intense decompensation of nutritional and personal care habits; All this led us to the conclusion that we were facing a new, interesting and serious psychopathological disorder."

Dr. Navarro Cueva
Hospital Hermilio Valdizán, Lima, Perú.
(1972)

Castaño G. *Cocaínas fumables en Latinoamérica. Adicciones* 2000; 12(4):541-550.

CBP: Experience CIAT, Montevideo, Uruguay.



- Period January 1, 2004 – December 31, 2005
- 113 admissions for CBP use in 48 hours
- IAE few hours after last use (ingestion of meds: Psycho-pharmaceuticals, cardiovascular , endocrine)

Pascale A, Negrin A, Laborde A. Adicciones 2010; 22: 227-32

COCAINE BASE PASTE: Experience CIAT

- Similar clinical manifestations in overdose as crack and cocaine Hcl.
- Smokeable cocaine (euphoria, respiratory symptoms)
- Suicide attempts: dysphoria consumption post
- Poly-drug use: diagnostic difficulties and multiplication of risks (62 % abuse – 38 % suicide attempts)

Pascale A, Negrin A, Laborde A. Addictions 2010; 22: 227-32

COCAINE BASE PASTE Chronic complications

- Intense psychological and physical dependency
- Neuropsychiatric - disturbances SPECT (Ferrando et al. 2009). Need to establish differences with psychiatric co morbidities (Cardeillac et al, 2009)
- Complications: cardiovascular system, central nervous system, liver.
- Malnutrition
- Mode of consumption: respiratory disease, burns
- Transmittable infectious diseases
 - High risk sexual behavior
 - Consumer devices?

COCAINE BASE PASTE – Respiratory Disease

- Respiratory symptoms in PBC users are very frequent and seem to be related to specific lung disease .
- Rx findings consistent with chronic bronchitis, pneumonia associated with eosinophilia in three cases (lung similarity to crack?)
- CT abnormalities: chronic respiratory irritation cocaine and combustion products
- Similarities with studies in crack users, both in the context of poly-drug use and case reports.

Pascale A, Negrin A, Ormaechea R. Preliminary Study of the Effect on the Lungs Due to the Consumption of Cocaine Base Paste. *Arch Bronconeumol*. 2011;47(2):106-111

COCAINE BASE PASTE AND PREGNANCY

- Magri et al. 2007
 - Survey among mothers at Montevideo Pediatric Hospital (n=900):
 - * 0,4 % PBC y 0 % CI cocaine
 - Meconium samples (n=204) : 2,5 % (CI cocaine and CBP)
- Moraes et al. 2011
 - Survey (n=239): 0,43 % (PBC) and 0.87 % (cocaine Hcl)
 - Samples in Meconium (n=93): 9,37 % (cocaine CI and CBP)

Maternity Complications:

- overdose – acute intoxication
- Obstetrics : spontaneous abortion, DPPNI, hypertensive state in pregnancy
- Acute psychiatric conditions
- Withdrawal Syndrome
- Infectious diseases
- Chronic parenchyma repercussions


Pascale A, UNDP 2010.

COCAINE BASE PASTE and PREGNANCY

- Congenital Malformations?
- Increase FC and PA
- RCIU, low birth weight, premature birth, small for gestational age (Mena et al 2000)
- Withdrawal syndrome (mild)
- Vertically transmittable diseases
- Lactation: risk of overdose
- Neurodevelopment disorders

Moraes M, Scorza C, Abin-Carriquiry JA, Pascale A, Gonzalez G, Umpierrez E. Cocaine base paste consumption during pregnancy: incidence, characteristics and implications. Arch Pediatr Urug 2010; 81(2): 100-104.

COCAINE BASE PASTE - Treatment

- Integral Treatment  interdisciplinary approach
- Individual Evaluation
 - Medical (psychiatric, toxicological)
 - Psychological (including relapse prevention)
 - Socio-familiar diagnosis
- follow-up
- Treatment
 - Individual/group (relapse prevention)
 - Specific approaches (adolescents, women, imprisoned)
 - Ambulatory/residential
 - Abstinence
 - Harm reduction

Consensus for the integral treatment of neonates exposed to psychoactive substances during gestation

- Moraes et al. Arch Pediatr Urug 2010; 81(4): 251-257
- Approved by consensus by the National Health Program for Children (Ministerio de Salud Pública - Uruguay), abril 2011.
- Interdisciplinary team (neonatologist pediatricians, child and adult psychiatrists, toxicologists, social workers, neuro-pediatricians).
- Prenatal assessment
- Possible clinical and behavioral scenarios to follow up given mother consumed cocaine base paste during pregnancy.
- Variables: abstinence during the last trimester, birth control, desire to stop use, neonatal physical exam, maternal risk factors (craving, withdrawal syndrome), social network and family support risks, bonding between newborn and mother.
- Includes: decision re: rooming together, lactation, type of follow up (during admission and discharge), according to above variables.

CHALLENGES: proposed by REDLA

- Deepen research regarding the composition in different countries (and within different zones across countries...)
- Continue research on acute clinical symptoms related to CBP consumption, characterizing the associated pathology (ies).
- More in-depth studies on pulmonary repercussions with greater numbers of patients, long term prospective studies with control group and tobacco smokers, marijuana and CBP as both exclusive use and poly-drug use.
- Continue research on cardiovascular impact (SPECT)
- In-depth studies on the repercussions associated with mode of use (exposure biomarkers)
- Continue the evaluation and study of neuropsychological repercussions (case studies), liver, kidney (clinical cases of rhabdomyolysis and acute kidney failure).
- Research on embryo-fetal repercussions and effects on neurodevelopment.
- Design studies to evaluate the efficacy of pharmacological and costs to treatment.

Dr. Antonio Pascale Prieto
MD, Toxicologist

*Red Latinoamericana de
Investigadores en Droga (REDLA)*

dr_antoniopascale@yahoo.com
antopascale@gmail.com