

Cocaine and Amphetamines

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REFERENCES

- Hoffman RS, Henry GC, Howland MA, et al: Association between life-threatening cocaine toxicity and plasma cholinesterase activity. *Ann Emerg Med* 21: 247, 1992. [PMID: 1536483]
- Heard K, Palmer R, Zahniser NR: Mechanisms of acute cocaine toxicity. *Open Pharmacol J* 2: 70, 2008. [PMID: 19568322]
- Zimmerman JL: Cocaine intoxication. *Crit Care Clin* 28: 517, 2012. [PMID: 22998988]
- Greene SL, Kerr F, Braitberg G: Review article: amphetamines and related drugs of abuse. *Emerg Med Australas* 20: 391, 2008. [PMID: 18973636]
- Courtney KE, Ray LA: Methamphetamine: an update on epidemiology, pharmacology, clinical phenomenology, and treatment literature. *Drug Alcohol Depend* 143: 11, 2014. [PMID: 25176528]
- White SR: Amphetamine toxicity. *Semin Respir Crit Care Med* 23: 27, 2002. [PMID: 16088595]
- Panenska WJ, Procyshyn RM, Lecomte T, et al: Methamphetamine use: a comprehensive review of molecular, preclinical and clinical findings. *Drug Alcohol Depend* 129: 167, 2013. [PMID: 23273775]
- Soutullo CA, Cottingham EM, Keck PE: Psychosis associated with pseudoephedrine and dextromethorphan. *J Am Acad Child Adolesc Psychiatry* 38: 1471, 1999. [PMID: 10596243]
- Roberge RJ, Hirani KH, Rowland PL, et al: Dextromethorphan- and pseudoephedrine-induced agitated psychosis and ataxia: case report. *J Emerg Med* 17: 285, 1999. [PMID: 10195488]
- Curran C, Byrappa N, McBride A: Stimulant psychosis: systematic review. *Br J Psychiatry* 185: 196, 2004. [PMID: 15339823]
- Haller CA, Benowitz NL: Adverse cardiovascular and central nervous system events associated with dietary supplements containing ephedra alkaloids. *N Engl J Med* 343: 1833, 2000. [PMID: 11117974]
- Kraemer M, Uekermann J, Wiltfang J, Kis B: Methylphenidate-induced psychosis in adult attention-deficit/hyperactivity disorder: report of 3 new cases and review of the literature. *Clin Neuropsychopharmacol* 33: 204, 2010. [PMID: 20571380]
- Spiller HA, Hays HL, Alegrías A Jr: Overdose of drugs for attention-deficit hyperactivity disorder: clinical presentation, mechanisms of toxicity, and management. *CNS Drugs* 27: 531, 2013. [PMID: 23757186]
- Klein-Schwartz W: Abuse and toxicity of methylphenidate. *Curr Opin Pediatr* 14: 219, 2002. [PMID: 11981294]
- Prosser JM, Nelson, LS: Toxicology of synthetic cathinones: a review of synthetic cathinones. *J Med Toxicol* 8: 33, 2012. [PMID: 22108839]
- Miotto K, Striebel J, Cho AK, Wang C: Clinical and pharmacological aspects of bath salt use: a review of the literature and case reports. *Drug Alcohol Depend* 132: 1, 2013. [PMID: 23916320]
- Paillet-Loilier M, Cesbron A, Le Boisselier R, Bourguine J, Debruyne D: Emerging drugs of abuse: current perspectives on substituted cathinones. *Subst Abuse Rehabil* 5: 37, 2014. [PMID: 24966713]
- Phillips K, Luk A, Soor GS, Abraham JR, Leong S, Butany J: Cocaine cardiotoxicity: a review of the pathophysiology, pathology, and treatment options. *Am J Cardiovasc Drugs* 9: 177, 2009. [PMID: 19463023]
- Lange RA, Cigarroa RG, Yancy CW, et al: Cocaine-induced coronary artery vasoconstriction. *N Engl J Med* 321: 1557, 1989. [PMID: 2573838]
- Lange RA, Cigarroa RG, Flores ED, et al: Potentiation of cocaine-induced coronary vasoconstriction by beta-adrenergic blockade. *Ann Intern Med* 112: 897, 1990. [PMID: 1971166]
- McCord J, Jneid H, Hollander JE, et al: Management of cocaine-associated chest pain and myocardial infarction: a scientific statement from the American Heart Association Acute Cardiac Care Committee of the Council on Clinical Cardiology. *Circulation* 117: 1897, 2008. [PMID: 18347214]
- Cunningham R, Walton MA, Weber JE, et al: One-year medical outcomes and emergency department recidivism after emergency department observation for cocaine-associated chest pain. *Ann Emerg Med* 53: 310, 2009. [PMID: 18824277]
- Mittleman MA, Mintzer D, Maclure M, et al: Triggering of myocardial infarction by cocaine. *Circulation* 99: 2737, 1999. [PMID: 10351966]
- Hollander JE, Hoffman RS: Cocaine-induced myocardial infarction: an analysis and review of the literature. *J Emerg Med* 10: 169, 1992. [PMID: 1607624]
- Hollander JE, Hoffman RS, Gennis P, et al: Prospective multicenter evaluation of cocaine associated chest pain. *Acad Emerg Med* 1: 330, 1994. [PMID: 7614278]
- Singh V, Rodriguez AP, Thakkar, et al: Hospital admissions for chest pain associated with cocaine use in the United States. *Am J Med* 130: 688, 2017. [PMID: 28063854]
- Wang NE, Gillis E, Mudie D: Hypertensive crisis and NSTEMI after accidental overdose of sustained release pseudoephedrine: a case report. *Clin Toxicol (Phila)* 46: 922, 2008. [PMID: 18608273]
- O'Leary ME, Hancox JC: Role of voltage-gated sodium, potassium and calcium channels in the development of cocaine-associated cardiac arrhythmias. *Br J Clin Pharmacol* 69: 427, 2010. [PMID: 20573078]
- Ramirez FD, Femenía F, Simpson CS, Redfearn DP, Michael KA, Baranchuk A: Electrocardiographic findings associated with cocaine use in humans: a systematic review. *Expert Rev Cardiovasc Ther* 10: 105, 2012. [PMID: 22149529]
- Yap YG, Behr ER, Camm AJ: Drug-induced Brugada syndrome. *Europace* 11: 989, 2009. [PMID: 19482855]
- Arora S, Alfayoumi F, Srinivasan V: Transient left ventricular apical ballooning after cocaine use: is catecholamine cardiotoxicity the pathologic link? *Mayo Clin Proc* 81: 829, 2006. [PMID: 16770985]
- Sundboll J, Pareek M, Hogsbro M, et al: Iatrogenic takotsubo cardiomyopathy induced by locally applied epinephrine and cocaine. *BMJ Case Rep* 2014: bcr2013202401, 2014. [PMID: 24554679]
- Kaufman MJ, Levin JM, Ross MH, et al: Cocaine-induced cerebral vasoconstriction detected in humans with magnetic resonance angiography. *JAMA* 279: 376, 1998. [PMID: 9459471]
- Restrepo CS, Carrillo JA, Martínez S, et al: Pulmonary complications from cocaine and cocaine-based substances: imaging manifestations. *Radiographics* 27: 941, 2007. [PMID: 17620460]
- Osborn HH, Tang M, Bradley K, et al: New onset bronchospasm or recrudescence of asthma associated with cocaine abuse. *Acad Emerg Med* 4: 689, 1997. [PMID: 9223692]
- Tashkin DP, Kleerup EC, Koyal SN, et al: Acute effects of inhaled and intravenous cocaine on airway dynamics. *Chest* 110: 904, 1996. [PMID: 8874243]
- Pendergraft WF, Herlitz LC, Thornley-Brown D, et al: Nephrotoxic effects of common and emerging drugs of abuse. *Clin J Am Soc Nephrol* 9: 1996, 2014. [PMID: 25035273]
- Richards JR, Johnson EB, Stark RW, Derlet RW: Methamphetamine abuse and rhabdomyolysis in the ED: a 5-year study. *Am J Emerg Med* 17: 681, 1999. [PMID: 10597089]
- Brody SL, Wrenn KD, Wilber MM, Slovic CM: Predicting the severity of cocaine associated rhabdomyolysis. *Ann Emerg Med* 19: 1137, 1990. [PMID: 2221520]
- Cain MA, Bornick P, Whiteman V: The maternal, fetal, and neonatal effects of cocaine exposure in pregnancy. *Clin Obstet Gynecol* 56: 124, 2013. [PMID: 23314714]
- De Giovanni N, Marchetti D: Cocaine and its metabolites in the placenta: a systematic review of the literature. *Reprod Toxicol* 33: 1, 2012. [PMID: 22094170]
- Ness RB, Grisso JA, Hirschinger N, et al: Cocaine and tobacco use and the risk of spontaneous abortion. *N Engl J Med* 340: 333, 1999. [PMID: 9929522]
- Plessinger MA, Woods JR: Cocaine in pregnancy: recent data on maternal and fetal risks. *Obstet Gynecol Clin North Am* 25: 99, 1998. [PMID: 9547762]
- Moeller KE, Lee KC, Kissack JC: Urine drug screening: practical guide for clinicians. *Mayo Clin Proc* 83: 66, 2008. [PMID: 18174009]
- Becley I, Ansari NA, Khawja HA, Mohsen Y: Clinical management of cocaine body packers: the Hillingdon experience. *Can J Surg* 52: 417, 2009. [PMID: 19865578]
- Hayes BD, Martinez JP, Barrueto F Jr: Drug-induced hyperthermic syndromes: part I. Hyperthermia in overdose. *Emerg Med Clin North Am* 31: 1019, 2013. [PMID: 24176476]
- Agrawal PR, Scarabelli TM, Saravolatz L, et al: Current strategies in the evaluation and management of cocaine-induced chest pain. *Cardiol Rev* 23: 303, 2015. [PMID: 25580707]
- Amsterdam EA, Wenger NK, Brindis RG, et al: 2014 AHA/ACC guideline for the management of patients with non-ST-elevation acute coronary syndromes: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation* 130: e344, 2014. [PMID: 25249585]
- Schurr JW, Gitman B, Belchikov Y: Controversial therapeutics: the β -adrenergic antagonist and cocaine-associated cardiovascular complications dilemma. *Pharmacotherapy* 34: 1269, 2014. [PMID: 25224512]
- Havakuk O, Rezkalla SH, Kloner RA: The cardiovascular effects of cocaine. *J Am Coll Cardiol* 70: 101, 2017. [PMID: 28662796]
- Rangel C, Shu RG, Lazar LD, Vittinghoff E, Hsue PY, Marcus GM: Beta-blockers for chest pain associated with recent cocaine use. *Arch Intern Med* 170: 874, 2010. [PMID: 20498415]
- Ibrahim M, Maselli DJ, Hasan R, Hamilton A: Safety of β -blockers in the acute management of cocaine-associated chest pain. *Am J Emerg Med* 31: 613, 2013. [PMID: 23122421]
- Fanari Z, Kennedy KK, Lim MJ, Laddu AA, Stolk JM: Comparison of in-hospital outcomes for beta-blocker use versus non-beta blocker use in patients presenting with cocaine-associated chest pain. *Am J Cardiol* 113: 1802, 2014. [PMID: 24742472]
- Richards JR, Hollander JE, Ramoska EA, et al: β -Blockers, cocaine, and the unopposed α -stimulation phenomenon. *J Cardiovasc Pharmacol Ther* 22: 239, 2017. [PMID: 28399647]
- Richards JR, Lange RA, Arnold TC, Horowitz BZ: Dual cocaine and methamphetamine cardiovascular toxicity: rapid resolution with labetalol. *Am J Emerg Med* 35: 519.e1, 2017. [PMID: 27707569]
- Anderson JL, Adams CD, Antman EM, et al: 2012 ACCF/AHA focused update incorporated into the ACCF/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 61: e179, 2013. [PMID: 23639841]
- Boehrer JD, Moliterno DJ, Willard JE, Hillis LD, Lange RA: Influence of labetalol on cocaine-induced coronary vasoconstriction in humans. *Am J Med* 94: 608, 1993. [PMID: 8506886]
- Mahler SA, Riley RF, Hiestand BC, et al: The HEART pathway randomized trial. *Circ Cardiovasc Qual Outcomes* 8: 195, 2015. [PMID: 25737484]
- Richards JR, Garber D, Laurin EG, et al: Treatment of cocaine cardiovascular toxicity: a systematic review. *Clin Toxicol (Phila)* 54: 345, 2016. [PMID: 26919414]
- Hoffman RS: Treatment of patients with cocaine-induced arrhythmias: bringing the bench to the bedside. *Br J Clin Pharmacol* 69: 448, 2010. [PMID: 20573080]
- Miranda CH, Pazin-Filho A: Crack cocaine-induced cardiac conduction abnormalities are reversed by sodium bicarbonate infusion. *Case Rep Med* 2013: 396401, 2013. [PMID: 23762070]

62. Chan A, Isbister GK, Kirkpatrick CMJ, Dufful SB: Drug-induced QT prolongation and torsades de pointes: evaluation of a QT nomogram. *QJM* 100: 609, 2007. [PMID: 17881416]
63. Booker RJ, Smith JE, Rodger MP: Packers, pushers and stuffers—managing patients with concealed drugs in UK emergency departments: a clinical and medicolegal review. *Emerg Med J* 26: 316, 2009. [PMID: 19386860]
64. West PL, McKeown NJ, Hendrickson RG: Methamphetamine body stuffers: an observational case series. *Ann Emerg Med* 55: 190, 2010. [PMID: 19819590]
65. Cappelletti S, Piacentino D, Sani G, et al: Systematic review of the toxicological and radiological features of body packing. *Int J Legal Med* 130: 693, 2016. [PMID: 26932867]
66. Flach PM, Ross SG, Ampanozi G, et al: 'Drug mules' as a radiological challenge: sensitivity and specificity in identifying internal cocaine in body packers, body pushers and body stuffers by computed tomography, plain radiography and Lodox. *Eur J Radiol* 81: 2518, 2012. [PMID: 22178312]
67. Berger FH, Nieboer KH, Goh GS, Pinto A, Scaglione M: Body packing: a review of general background, clinical and imaging aspects. *Radiol Med* 120: 118, 2015. [PMID: 25300715]
68. Thanacoody R, Caravati EM, Troutman B, et al: Position paper update: whole bowel irrigation for gastrointestinal decontamination of overdose patients. *Clin Toxicol (Phila)* 53: 5, 2015. [PMID: 25511637]
69. Kosten TR, O'Connor PG: Management of drug and alcohol withdrawal. *N Engl J Med* 348: 1786, 2003. [PMID: 12724485]
70. Shoptaw SJ, Kao U, Heinzerling K, Ling W: Treatment for amphetamine withdrawal. *Cochrane Database Syst Rev* 2: CD003021, 2009. [PMID: 19370579]
71. Donroe JH, Tetrault JM: Substance use, intoxication, and withdrawal in the critical care setting. *Crit Care Clin* 33: 543, 2017. [PMID: 28601134]