Appendix
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Cyanide intoxication by apricot kernels: A case report and literature review

Appendix Table 1. Summary of case reports of cyanide poisoning after apricot kernel ingestion [*to be continued on the next page*].

Reference	Location	Age-Gender	Time of symptoms afer ingestion	Amount of ingested apricot kernels	Cyanide levels	Signs and symptoms	Laboratory tests	Intervention	Mechanical ventilation/hospital stay/outcome
Rubino and Davidoff[16] (1979)	USA	49 y/F	30 min	20-40	3.2 mg/L (on admission) (levels higher than 1mg/L are highly toxic)	Headache, weakness, nausea, vomiting, disorientation	No specific abnormality	Cyanide antidote package *Inhalation of amyl nitrite *i.v sodium nitrite *i.v sodium thiosulfate	*No mechanical ventilation *3 days hospital stay *Survived with no sequelae
Suchard *et al.*[12] (1998)	USA	41 y/F	20 min	30 (estimated total, 15 g)	43 µmol/L (normal range <15.8 µmol/L)	Numbness, generalized weakness, dyspnea, difficulty swallowing, Unconsciousness, diaphoresis, hypothermia, tachypnea	Hypergylycemia Metabolic acidosis	Oxygen Activated charcoal Cyanide antidote package (Eli-Lilly) *inhalation of amyl nitrite *i.v sodium nitrite *i.v sodium thiosulfate	*No mechanical ventilation *1 day hospital stay *Survived with no sequelae
Cigolini *et al.*[17] (2011)	Italy	35 y/F	70 min	20-30 (estimated total, 10-15 g)	Not measured	Headache, nausea, dyspnea, hypotension, tacyhcardia, tachypnea, hypoxemia	High anion gap metabolic acidosis	Oxygen, gastric lavage, Activated charcoal, Inhalation of amyl nitrite, i.v sodium thiosulfate, Hydroxocobalamin (Cyanokit)	*No mechanical ventilation *1 day hospital stay *Survived with no sequelae
Sauer *et al.*[18] (2015)	Germany	4 y/M	N/D	5-10 apricot kernels and oral vitamin B17 pills	515 µg/L (normal range <50 µg/L, toxic >200 µg/L)	Coma, agitation, encephalopathy	Hypergylycemia Severe metabolic and lactic acidosis	Fluid resuscitation Oxygen Sodium thiosulfate	*No mechanical ventilation *3 days hospital stay *Survived with no sequelae

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Reference	Location	Age-Gender	Time of symptoms afer ingestion	Amount of ingested apricot kernels	Cyanide levels	Signs and symptoms	Laboratory tests	Intervention	Outcome
Vlad *et al.*[19] (2015)	Australia	39 y/F	N/D	Quarter of a teaspoon of apricot kernels	N/D	Weakness, vomiting, coma, seizures, status epilepticus, hypothermia, tachycardia	Hypergylycemia Severe metabolic and lactic acidosis	Supportive measures, Mechanical ventilation for 24 hours No specific treatment	*Mechanical ventilation (+) *Hospital stay (N/D) *Survived with no sequelae
Akıl *et al.*[20] (2013)	Turkey	3 y/F	60 min	8-12	N/D	Vomiting, coma, lethargy, unconsciousness	No specific abnormality	Activated charcoal, Lactulose, Hydroxocobalamin (Cyanokit)	*No mechanical ventilation *2 days hospital stay *Survived with no sequelae
Sahin[21] (2011)	Turkey	28 mo/F	15 min	10	>3 mg/L (at 4th hour of admission)	Headache, dizziness, unconsciousness, seizures, miosis with negative lihgt reflex	Hypergylycemia Severe metabolic and lactic acidosis	Gastric lavage, Supportive measures, Mechanical ventilation, Dicobalt edetate (Kelocyanor)	*Mechanical ventilation (+) *22 days hospital stay *Died on 22th day
Unal *et al.*[22] (2016)	Turkey	3.5 y/M	45 min	N/D	>2 mg/dL	Fainting, muscle contractions, dyspnea, abdominal pain, seizures, coma, bradycardia, hypotension	-Severe metabolic and lactic acidosis, -hypoglycemia -Elevated liver enzymes, creatinin kinase and lactate dehydrogenase, -positive MRI findings	Activated charcoal, Cardiopulmonary support, multipl anticonvulsants, Mechanical ventilation, Cyanide antidote kit	*Mechanical ventilation (+) *12 days hospital stay *cardiac arrest two times in the first day, *survived with neurologic sequelae

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Reference	Location	Age-Gender	Time of symptoms afer ingestion	Amount of ingested apricot kernels	Cyanide levels	Signs and symptoms	Laboratory tests	Intervention	Outcome
Ozcan *et al.*[23] (2017)	Turkey	29 mo/F	30 min	5-6	N/D	Unconsciousness, vomiting	No specific abnormality	Oxygen, activated charcoal, No specific treatment	*No mechanical ventilation *Hospital stay (N/D) *Survived with no sequelae
Dogan *et al.*[24] (2006)	Turkey	3.5 y/F	N/D	A lot of apricot, appricot kernels and plum	N/D	Fever, seizures, lethargy, agitation, vomiting, increased deep tendon reflexes, unconsciousness	positive MRI findings	Gastric lavage, activated charcoal, multipl anticonvulsants, Mechanical ventilation, Hydroxocobalamin	*Mechanical ventilation (+) *21 days hospital stay * survived with neurologic sequelae
Sen *et al.*[25] (2009)	Turkey	2.5 y/F	30 min	20	N/D	Unconsciousness, muscle weakness, seizures, hypothermia, coma, cardiovascular collaps,	Hypergylycemia Severe metabolic and lactic acidosis Leucocytosis	Oxygen, gastric lavage, bicarbonate, crystalloids, inotropes, No specific treatment	*No mechanical ventilation *2 days hospital stay *Survived with no sequelae
Kaya *et al.*[26] (2012)	Turkey	2 y and 3 mo/M	1 hour	A lot of arpicot kernels	N/D	Vomiting, lethargy, unconsciousness, apnea, hypothermia	Severe metabolic acidosis, hyponatremia	Oxygen, activated charcoal, bicarbonate, hydroxocobalamin, mechanical ventilation	*Mechanical ventilation (+) *2 days hospital stay *Survived with no sequelae
Saz *et al.*[27] (2009)	Turkey	3.5 y/M	15 min	15-20	N/D	Hypoventilation, apnea, cardivascular collaps, hypotension, coma	Hypergylycemia Severe metabolic and lactic acidosis	Oxygen, gastric lavage, activated charcoal, bicarbonate, inotropes, mechanical ventilation (16h), cyanide antidote package, hydroxocobalamin	Mechanical ventilation (+) *3 days hospital stay *Survived with no sequelae

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Reference	Location	Age-Gender	Time of symptoms afer ingestion	Amount of ingested apricot kernels	Cyanide levels	Signs and symptoms	Laboratory tests	Intervention	Outcome
Tatli *et al.*[28] (2017)	Turkey	60 y/ F	<3 hours	10-15	1639 μg/L (>50 μg/L is toxic)	Vomiting, headache, unconsciousness, hypothermia	Slight metabolic acidosis	Dicobalt edetate (Kelocyanor)	*No mechanical ventilation *1 day hospital stay *Survived with no sequelae
Tanriverdi *et al.*[29] (2014)	Turkey	4 y/M	30 min	A lot of apricot kernels	N/D	Unconsciousness, eleveated capillary refill time	No specific abnormality	Gastric lavage, activated charcoal, oxygen No specific treatment	*No mechanical ventilation *3 days hospital stay *Survived with no sequelae
Ozkan *et al.*[30] (2013)	Turkey	2.5 y/F	2 hours	4-5	N/D	Vomiting, lethargy	No specific abnormality	Oxygen No specific treatment	*No mechanical ventilation *1 day hospital stay *Survived with no sequelae
Ozkan *et al.*[30] (2013)	Turkey	4 y/F	2 hours	4-5	N/D	Vomiting	No specific abnormality	No specific treatment	*No mechanical ventilation *1 day hospital stay *Survived with no sequelae

Appendix Table 2. Clinical presentation of acute cyanide poisoning after oral exposure of cyanogenic glycosides.

Systems affected by cyanide	Symptoms and clinical findings
Respiratory	*-deep and rapid breathing* *-shortness of breath* *-tachypnea* *-dyspnea* *-apnea* *-acute respiratory distress syndrome* *-arteriolization of the central venous blood and narrowed arteriovenous oxygen differential* *-absence of cyanosis*
Cardiovascular	*-weak pulses* *-inaudible heart sounds* *-hypotension* *-tachycardia/bradycardia* *-dysrhythmia* *-cardiovascular collaps, shock* *-asystole*
Gastrointestinal	*-nausea* *-vomiting* *-abdominal pain*
Musculoskeletal	*-muscular rigidity* *-generalized weakness* *-malaise*
Hepatic	*-hepatotoxicity*
Metabolic	*-metabolic acidosis* *-lactic acidosis* *-elevated lactate/pyruvate ratio*
Neurologic	*-headache* *-agitation* *-dizziness* *-lethargy* *-confusion* *-coma* *-seizures* *-acute hypoxic/ischemic changes in cerebellum, basal ganglia, hypothalamus and deep cortical layers* *-positive Babinski's sign* *-neurologic sequelae*
Other	*-bitter almond breath* *-death*

Appendix Table 3. Management of acute cyanide poisoning after oral ingestion.

Decontamination	*do not induce emesis *gastric lavage and activated charcoal (most effective if performed in the first hour) *isolate emesis because of hydrogen cyanide content
Basic and advanced life support	*establish ABCs (airway, breathing, circulation) *establish intravenous access. *100% oxygen *start advanced life support if cardiopulmonary collapse occurs *intubation and mechanical ventilation if needed *do not perform mouth to mouth resuscitation *sodium bicarbonate for metabolic acidosis
Antidotal therapy	*Cyanide antidote kit (CAK) (no longer available) -amyl nitrite -sodium nitrite -sodium thiosulfate *Sodium nitrite and sodium thiosulfate (Nithiodote) *Sodium thiosulfate *Hydroxocobalamin (Cyanokit®) *Dicobalt EDTA (Kelocyanor®)
Supportive care	*transport to intensive care unit *cardiac and respiratory monitoring *laboratory investigations, including arterial and venous blood gas analysis, serum lactate levels, complete blood count, serum cyanide levels *management of dysrhythmias *management of seizures