

-See 12 for PATIENT COUNSELING INFORMATION.

-Revised: 1/2017

+See 17 for PATIENT COUNSELING INFORMATION.

+Revised: 10/2019

-13 NONCLINICAL TOXICOLOGY

+13

+NONCLINICAL TOXICOLOGY

-ACETADOTE® (acetylcysteine) Injection

-Package Insert, page 1 of 12

-Reference ID: 4044640

+Page 1

+Reference ID: 4513653

-2. Obtain the following laboratory tests to monitor hepatic and renal function and electrolyte and fluid

-balance: aspartate aminotransferase (AST), alanine aminotransferase (ALT), bilirubin, international

-normalized ratio (INR), creatinine, blood urea nitrogen (BUN), blood glucose, and electrolytes.

+2. Obtain the following laboratory tests to monitor hepatic and renal function and electrolyte and fluid balance:

+aspartate aminotransferase (AST), alanine aminotransferase (ALT), bilirubin, international normalized ratio

+(INR), creatinine, blood urea nitrogen (BUN), blood glucose, and electrolytes.

-• Obtain an acetaminophen concentration to determine need for continued treatment [see Dosage and Administration (2.2)].

+• Obtain an acetaminophen concentration to determine need for continued treatment [see Dosage and Administration (2.2)].

-• Obtain an acetaminophen concentration to determine need for continued treatment [see Dosage and Administration (2.2)].

+• Obtain an acetaminophen concentration to determine need for continued treatment [see Dosage and Administration (2.2)].

-•

-Use the Rumack-Matthew nomogram (Figure 1) to determine whether or not to initiate treatment

+• Use the Rumack-Matthew nomogram (Figure 1) to determine whether or not to initiate treatment

-treatment initiation between 15 and 24 hours post-ingestion of acetaminophen yields limited efficacy. However, it

-does not appear to worsen the condition of patients and it should not be withheld, since the reported time of ingestion may not be correct.

-ACETADOTE® (acetylcysteine) Injection

-Package Insert, page 2 of 12

-Reference ID: 4044640

+treatment initiation between 15 and 24 hours post-ingestion of acetaminophen yields limited efficacy. However, it does

+not appear to worsen the condition of patients and it should not be withheld, since the reported time of ingestion may not be correct.

+Page 2

+Reference ID: 4513653

-• Refer to the Rumack-Matthew nomogram (see Figure 1) to determine whether or not to initiate treatment with ACETADOTE.

-• Initiation of ACETADOTE depends on the plasma or serum acetaminophen concentration and also the clinical presentation of the patient.

+• Refer to the Rumack-Matthew nomogram (see Figure 1) to determine whether or not to initiate treatment with ACETADOTE.

+• Initiation of ACETADOTE depends on the plasma or serum acetaminophen concentration and also the clinical presentation of the patient.

-For patients with an acute overdose from an extended-release acetaminophen, if the acetaminophen concentration at 4 hours post ingestion is below the possible toxicity line then obtain a second sample for acetaminophen

-concentration 8 to 10 hours after the acute ingestion. If the second value is at or above the "possible" toxicity line (dotted line in nomogram):

+For patients with an acute overdose from an extended-release acetaminophen, if the acetaminophen concentration at 4 hours post ingestion is below the possible toxicity line then obtain a second sample for acetaminophen concentration

+8 to 10 hours after the acute ingestion. If the second value is at or above the "possible" toxicity line (dotted line in nomogram):

-Figure 1. Rumack-Matthew Nomogram for Estimating Potential for Hepatotoxicity for Acetaminophen

-Positioning – Plasma or Serum Acetaminophen Concentration versus Time (hours) Post-acetaminophen

-Ingestion graph

+Figure 1. Rumack-Matthew Nomogram for Estimating Potential for Hepatotoxicity for Acetaminophen Posi
+– Plasma or Serum Acetaminophen Concentration versus Time (hours) Post-acetaminophen Ingestion
-ACETADOTE® (acetylcysteine) Injection
-Package Insert, page 3 of 12
-Reference ID: 4044640
+Reference ID: 4513653
+Page 3
-The acetaminophen concentration was in the non-toxic range, but time of ingestion was unknown or less t
-hours:
+The acetaminophen concentration was in the non-toxic range, but time of ingestion was unknown or less
-consideration should be given to the need for continued treatment with ACETADOTE beyond a total of thr
-separate doses over a 21-hour infusion period.
+consideration should be given to the need for continued treatment with ACETADOTE beyond a total of th
+doses over a 21-hour infusion period.
-“special health professional assistance line for acetaminophen overdose” at 1-800-525-6115 for assistanc
-dosing recommendations, or 1-877-484-2700 for additional information.
+“special health professional assistance line for acetaminophen overdose” at 1-800-525-6115 for assistanc
+recommendations, or 1-877-484-2700 for additional information.
-Visually inspect for particular matter and discoloration prior to administration. The color of the diluted solu
-ranges from colorless to a slight pink or purple once the stopper is punctured (the color change does not a
-quality of the product). The diluted solution can be stored for 24 hours at room temperature. Discard unus
-portion. If a vial was previously opened, do not use for intravenous administration.
-ACETADOTE® (acetylcysteine) Injection
-Package Insert, page 4 of 12
-Reference ID: 4044640
+Visually inspect for particular matter and discoloration prior to administration. The color of the diluted solu
+from colorless to a slight pink or purple once the stopper is punctured (the color change does not affect th
+the product). The diluted solution can be stored for 24 hours at room temperature. Discard unused portion
+was previously opened, do not use for intravenous administration.
+Page 4
+Reference ID: 4513653
-105mL
+105 mL
-210mL
+210 mL
-140mL
+140 mL
-280mL
+280 mL
-diluent* infused over 1 hour
+diluent1 infused over 1 hour
-50 mg/kg in 500 mL of
-diluent* infused over 4 hours
+50 mg/kg in 500 mL of diluent1
+infused over 4 hours
-diluent* infused over 16 hours
+diluent1 infused over 16 hours
-ACETADOTE® (acetylcysteine) Injection
-Package Insert, page 5 of 12
-Reference ID: 4044640
-This label may not be the latest approved by FDA.
-For current labeling information, please visit <https://www.fda.gov/drugsatfda>
-
-Table 4. Recommended ACETADOTE Dosage and Dilution for Patients 41 kg or Greater
+Page 5
+Reference ID: 4513653
+This label may not be the latest approved by FDA.
+For current labeling information, please visit <https://www.fda.gov/drugsatfda>
+

+Table 4. Recommended ACETADOTE Dosage and Dilution for Patients 41 kg or Greater

-> 100 kg**

+≥ 100 kg **

-* Dilute ACETADOTE in one of the following three solutions: sterile water for injection, 0.45% sodium chloride, or 0.9% sodium chloride.

+* Dilute ACETADOTE in one of the following three solutions: sterile water for injection, 0.45% sodium chloride, or 0.9% sodium chloride.

-of acute acetaminophen ingestion (i.e., the Rumack-Matthew nomogram) do not apply to patients with RSI.

-Therefore, obtain the following information to guide ACETADOTE treatment for RSI:

-• Acetaminophen serum or plasma concentrations. A reported history of the quantity of acetaminophen

-ingested is often inaccurate and is not a reliable guide to therapy.

-• Laboratory tests to monitor hepatic and renal function and electrolyte and fluid balance: AST, ALT,

-bilirubin, INR, creatinine, BUN, blood glucose, and electrolytes.

+of acute acetaminophen ingestion (i.e., the Rumack-Matthew nomogram) do not apply to patients with RSI.

+obtain the following information to guide ACETADOTE treatment for RSI:

+• Acetaminophen serum or plasma concentrations. A reported history of the quantity of acetaminophen

+is often inaccurate and is not a reliable guide to therapy.

+• Laboratory tests to monitor hepatic and renal function and electrolyte and fluid balance: AST, ALT, bilirubin,

+INR, creatinine, BUN, blood glucose, and electrolytes.

-ACETADOTE is contraindicated in patients with a previous hypersensitivity reaction to acetylcysteine [see

-Warnings and Precautions (5.1)].

+ACETADOTE is contraindicated in patients with a previous hypersensitivity reaction to acetylcysteine [see

+Warnings and Precautions (5.1)].

-Acute flushing and erythema of the skin may occur in patients receiving acetylcysteine intravenously. The

-reactions usually occur 30 to 60 minutes after initiating the infusion and often resolve spontaneously despite

-continued infusion of acetylcysteine. If a reaction to acetylcysteine involves more than simply flushing and

-erythema of the skin, it should be treated as a hypersensitivity reaction.

-ACETADOTE® (acetylcysteine) Injection

-Package Insert, page 6 of 12

-Reference ID: 4044640

+Acute flushing and erythema of the skin may occur in patients receiving acetylcysteine intravenously. The

+reactions usually occur 30 to 60 minutes after initiating the infusion and often resolve spontaneously despite

+continued infusion of acetylcysteine. If a reaction to acetylcysteine involves more than simply flushing and

+erythema of the skin, it should be treated as a hypersensitivity reaction.

+Management of less severe hypersensitivity reactions should be based upon the severity of the reaction and

+temporary interruption of the infusion and/or administration of antihistaminic drugs. The ACETADOTE infusion

+may be carefully restarted after treatment of the hypersensitivity symptoms has been initiated; however, if the

+Page 6

+Reference ID: 4513653

-Management of less severe hypersensitivity reactions should be based upon the severity of the reaction and

-temporary interruption of the infusion and/or administration of antihistaminic drugs. The ACETADOTE infusion

-may be carefully restarted after treatment of the hypersensitivity symptoms has been initiated; however, if the

-total volume of ACETADOTE administered should be adjusted for patients less than 40 kg and for those with

-fluid restriction. To avoid fluid overload, the volume of diluent should be reduced as needed [see Dosage

-and Administration (2)]. If volume is not adjusted fluid overload can occur, potentially resulting in hyponatremia

-and death.

+The total volume of ACETADOTE administered should be adjusted for patients less than 40 kg and for those with

+fluid restriction. To avoid fluid overload, the volume of diluent should be reduced as needed [see Dosage

+and Administration (2)]. If volume is not adjusted fluid overload can occur, potentially resulting in hyponatremia

+and death.

-were rash, urticaria and pruritus. The frequency of adverse reactions has been reported to be between 0.1

-21%, and they most commonly occur during the initial loading dose of acetylcysteine.

+were rash, urticaria and pruritus. The frequency of adverse reactions has been reported to be between 0.1

+21%, and they most commonly occur during the initial loading dose of acetylcysteine.

-poisoning, the rates of hypersensitivity reactions between a 15-minute and 60-minute intravenous infusion

-150 mg/kg loading dose of acetylcysteine were compared.

+poisoning, the rates of hypersensitivity reactions between a 15-minute and 60-minute intravenous infusion

+150 mg/kg loading dose of acetylcysteine were compared.

-administration is presented in Table 5. Overall, 17% of patients developed an acute hypersensitivity reaction

-in the 15-minute infusion group; 14% in the 60-minute infusion group) [see Warnings and Precautions (5.1)].

-Clinical Studies (14)].

+administration is presented in Table 5. Overall, 17% of patients developed an acute hypersensitivity reaction within the 15-minute infusion group; 14% in the 60-minute infusion group) [see Warnings and Precautions (5.1), Studies (14)].

-15-mins
-60-mins
+15-minutes
+60-minutes
-ACETADOTE® (acetylcysteine) Injection
-Package Insert, page 7 of 12
-Reference ID: 4044640
-This label may not be the latest approved by FDA.
-For current labeling information, please visit <https://www.fda.gov/drugsatfda>

-

-Treatment Group
-15-mins
-60-mins
-Pharyngitis
-Rhinorrhea
-Rhonchi
-Throat tightness
+Page 7
+Reference ID: 4513653
+This label may not be the latest approved by FDA.
+For current labeling information, please visit <https://www.fda.gov/drugsatfda>

+

+8
+Treatment Group
+15-minutes
+60-minutes
+Pharyngitis
+Rhinorrhea
+Rhonchi
+Throat tightness
-Unkn=Unknown
+Unkn= Unknown; NOS= not otherwise specified
-Incidence (%)
-% of Patients (n=4709)
+Incidence (%) n=4709
-Table 7. Distribution of reported hypersensitivity reactions in pediatric patients receiving intravenous acetylcysteine
-Incidence (%)
+Table 7. Distribution of reported hypersensitivity reactions in pediatric patients receiving intravenous acetylcysteine
-% of Patients (n=1905)
+Incidence (%) n=1905
-Limited published case reports and case series of pregnant women exposed to acetylcysteine during various trimesters are not sufficient to inform any drug associated risk. Delaying treatment of acetaminophen overdose may increase the risk of maternal or fetal morbidity and mortality [see Clinical Considerations]. Reproduction studies in rats following oral administration of acetylcysteine during the period of organogenesis at doses similar to the intravenous dose (based on the body surface area) did not cause any adverse effects to the fetus. The estimated background risk of major birth defects and miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

+Page 8

+Reference ID: 4513653

-rats and rabbits following oral administration of acetylcysteine during the period of organogenesis at dose
-the total intravenous dose (based on the body surface area) did not cause any adverse effects to the fetus
-estimated background risk of major birth defects and miscarriage for the indicated population is unknown.
-U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically
-recognized pregnancies is 2% to 4% and 15% to 20%, respectively.
-overdose and potentially toxic acetaminophen plasma levels may increase the risk of maternal and fetal m
-and mortality.

+overdose and potentially toxic acetaminophen plasma levels may increase the risk of maternal and fetal m
+mortality.

-of 300 mg/kg based on body surface area comparison) and in rabbits at oral doses up to 1000 mg/kg/day
-the recommended total human intravenous dose of 300 mg/kg based on body surface area comparison).

+of 300 mg/kg based on body surface area comparison) and in rabbits at oral doses up to 1000 mg/kg/day
+recommended total human intravenous dose of 300 mg/kg based on body surface area comparison). No

-There are no data on the presence of acetylcysteine in human milk, the effects on the breastfed infant, or
-on milk production. The developmental and health benefits of breastfeeding should be considered along w
-mother's clinical need for ACETADOTE and any potential adverse effects on the breastfed child from
-ACETADOTE or from the underlying maternal condition.

+There are no data on the presence of acetylcysteine in human milk, the effects on the breastfed infant, or
+milk production. The developmental and health benefits of breastfeeding should be considered along with
+clinical need for ACETADOTE and any potential adverse effects on the breastfed child from ACETADOTE
+the underlying maternal condition.

-controlled studies. Use of ACETADOTE in pediatric patients 5 kg and greater is based on clinical practice
-Dosage and Administration (2.4)].

+controlled studies. Use of ACETADOTE in pediatric patients 5 kg and greater is based on clinical practice
+and Administration (2.4)].

+An initial 150 mg/kg dose of acetylcysteine for a patient weighting 106 kg was mistakenly calculated as 1
+decimal point error resulting in a 10-fold higher than prescribed dose). An hour after the infusion started,
+complained of generalized heat sensation and body pain and developed widespread urticaria and hypote
+second acetylcysteine infusion was withheld and the patient was treated for anaphylaxis. Despite treatme
+subcombed to the acute inflammatory reaction and died.

-Acetylcysteine injection is an intravenous antidote for the treatment of acetaminophen overdose. Acetylcys
-the nonproprietary name for the N-acetyl derivative of the naturally occurring amino acid, L-cysteine (N-ac
-cysteine,). The compound is a white crystalline powder, which melts in the range of 104° to 110°C and ha
+Acetylcysteine injection is an intravenous antidote for the treatment of acetaminophen overdose. Acetylcys
+nonproprietary name for the N-acetyl derivative of the naturally occurring amino acid, L-cysteine (N-acety
+cysteine,). The compound is a white crystalline powder, which melts in the range of 104■ to 110■C and l

-ACETADOTE® (acetylcysteine) Injection

-Package Insert, page 9 of 12

-Reference ID: 4044640

+The molecular formula of the compound is C₅H₉NO₃S, and its molecular weight is 163.2. Acetylcysteine
+following structural formula:

+Page 9

+Reference ID: 4513653

-s

-tr

-uctu

-ra

-l f

-or

-mula

-The molecular formula of the compound is C₅H₉NO₃S, and its molecular weight is 163.2. Acetylcysteine
-the following structural formula:

+CH₃

+N

+SH

+O

+COOH

+H

-Acetylcysteine has been shown to reduce the extent of liver injury following acetaminophen overdose.

-Acetaminophen doses of 150 mg/kg or greater have been associated with hepatotoxicity. Acetylcysteine probably protects the liver by maintaining or restoring the glutathione levels, or by acting as an alternate substrate for conjugation with, and thus detoxification of, the reactive metabolite of acetaminophen.

-Acetylcysteine has been shown to reduce the extent of liver injury following acetaminophen overdose. Acetylcysteine probably protects the liver by maintaining or restoring the glutathione levels, or by acting as an alternate substrate for conjugation with, and thus detoxification of, the reactive metabolite of acetaminophen.

+Acetylcysteine has been shown to reduce the extent of liver injury following acetaminophen overdose. Acetylcysteine probably protects the liver by maintaining or restoring the glutathione levels, or by acting as an alternate substrate for conjugation with, and thus detoxification of, the reactive metabolite of acetaminophen.

+doses of 150 mg/kg or greater have been associated with hepatotoxicity. Acetylcysteine probably protects the liver by maintaining or restoring the glutathione levels, or by acting as an alternate substrate for conjugation with, and thus detoxification of, the reactive metabolite of acetaminophen.

+maintaining or restoring the glutathione levels, or by acting as an alternate substrate for conjugation with, and thus detoxification of, the reactive metabolite of acetaminophen.

+detoxification of, the reactive metabolite of acetaminophen.

-After a single intravenous dose of acetylcysteine, the plasma concentration of total acetylcysteine declined.

+After a single intravenous dose of acetylcysteine, the plasma concentration of total acetylcysteine declined.

-After a single oral dose of [35S]-acetylcysteine 100 mg, between 13 to 38% of the total radioactivity administered was recovered in urine within 24 hours. In a separate study, renal clearance was estimated to be approximately 30% of total body clearance.

+After a single oral dose of [35S]-acetylcysteine 100 mg, between 13 to 38% of the total radioactivity administered was recovered in urine within 24 hours. In a separate study, renal clearance was estimated to be approximately 30% of total body clearance.

+recovered in urine within 24 hours. In a separate study, renal clearance was estimated to be approximately 30% of total body clearance.

+body clearance.

-AUC) increased 1.6-fold in subjects with hepatic impairment compared to subjects with normal hepatic function. These changes are not considered to be clinically meaningful.

+AUC) increased 1.6-fold in subjects with hepatic impairment compared to subjects with normal hepatic function. These changes are not considered to be clinically meaningful.

+changes are not considered to be clinically meaningful.

-ACETADOTE® (acetylcysteine) Injection

-Package Insert, page 10 of 12

-Reference ID: 4044640

+13 NONCLINICAL TOXICOLOGY

+13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

+Long-term studies in animals have not been performed to evaluate the carcinogenic potential of acetylcysteine.

+Page 10

+Reference ID: 4513653

-13 NONCLINICAL TOXICOLOGY

-13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

-Long-term studies in animals have not been performed to evaluate the carcinogenic potential of acetylcysteine.

-A randomized, open-label, multi-center clinical study was conducted in Australia in patients with acetaminophen poisoning to compare the rates of hypersensitivity reactions between two rates of infusion for the intravenous acetylcysteine loading dose. One hundred nine subjects were randomized to a 15-minute infusion rate and seventy-one subjects were randomized to a 60 minute infusion rate. The loading dose was 150 mg/kg followed by a maintenance dose of 50 mg/kg over 4 hours and then 100 mg/kg over 16 hours. Of the 180 patients, 27% were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

+A randomized, open-label, multi-center clinical study was conducted in Australia in patients with acetaminophen poisoning to compare the rates of hypersensitivity reactions between two rates of infusion for the intravenous acetylcysteine loading dose. One hundred nine subjects were randomized to a 15-minute infusion rate and seventy-one subjects were randomized to a 60 minute infusion rate. The loading dose was 150 mg/kg followed by a maintenance dose of 50 mg/kg over 4 hours and then 100 mg/kg over 16 hours. Of the 180 patients, 27% were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

+poisoning to compare the rates of hypersensitivity reactions between two rates of infusion for the intravenous acetylcysteine loading dose. One hundred nine subjects were randomized to a 15-minute infusion rate and seventy-one subjects were randomized to a 60 minute infusion rate. The loading dose was 150 mg/kg followed by a maintenance dose of 50 mg/kg over 4 hours and then 100 mg/kg over 16 hours. Of the 180 patients, 27% were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

+acetylcysteine loading dose. One hundred nine subjects were randomized to a 15-minute infusion rate and seventy-one subjects were randomized to a 60 minute infusion rate. The loading dose was 150 mg/kg followed by a maintenance dose of 50 mg/kg over 4 hours and then 100 mg/kg over 16 hours. Of the 180 patients, 27% were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

+seventy-one subjects were randomized to a 60 minute infusion rate. The loading dose was 150 mg/kg followed by a maintenance dose of 50 mg/kg over 4 hours and then 100 mg/kg over 16 hours. Of the 180 patients, 27% were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

+by a maintenance dose of 50 mg/kg over 4 hours and then 100 mg/kg over 16 hours. Of the 180 patients, 27% were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

+were male and 73% were female. Ages ranged from 15 to 83 years, with the mean age being 30 years (+13.0).

-within 8 hours of acetaminophen ingestion. No hepatotoxicity occurred within this subgroup; however, with 95% confidence, the true hepatotoxicity rates could range from 0% to 9% for the 15-minute infusion group and from 0% to 12% for the 60-minute infusion group.

+within 8 hours of acetaminophen ingestion. No hepatotoxicity occurred within this subgroup; however, with 95% confidence, the true hepatotoxicity rates could range from 0% to 9% for the 15-minute infusion group and from 0% to 12% for the 60-minute infusion group.

+confidence, the true hepatotoxicity rates could range from 0% to 9% for the 15-minute infusion group and from 0% to 12% for the 60-minute infusion group.

+0% to 12% for the 60-minute infusion group.

-acetaminophen overdose over a 16-year period. Of the 1749 patients, 65% were female, 34% were male, and less than 1% was transgender. Ages ranged from 2 months to 96 years, with 72% of the patients falling in the 16- to 40-year-old age bracket. A total of 399 patients received acetylcysteine treatment. A post-hoc analysis identified 56 patients who (1) were at high or probable risk for hepatotoxicity (APAP greater than 150 mg/kg over the four hours line according to the Australian nomogram) and (2) had a liver function test. Of the 53 patients who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-less than 1% was transgender. Ages ranged from 2 months to 96 years, with 72% of the patients falling in the 16- to 40-year-old age bracket. A total of 399 patients received acetylcysteine treatment. A post-hoc analysis identified 56 patients who (1) were at high or probable risk for hepatotoxicity (APAP greater than 150 mg/kg over the four hours line according to the Australian nomogram) and (2) had a liver function test. Of the 53 patients who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-16- to 40-year-old age bracket. A total of 399 patients received acetylcysteine treatment. A post-hoc analysis identified 56 patients who (1) were at high or probable risk for hepatotoxicity (APAP greater than 150 mg/kg over the four hours line according to the Australian nomogram) and (2) had a liver function test. Of the 53 patients who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-identified 56 patients who (1) were at high or probable risk for hepatotoxicity (APAP greater than 150 mg/kg over the four hours line according to the Australian nomogram) and (2) had a liver function test. Of the 53 patients who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-the four hours line according to the Australian nomogram) and (2) had a liver function test. Of the 53 patients who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-21 hours) within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual

-The actual

-number of hepatotoxicity outcomes may be higher than what is reported here. For patients with multiple admissions for acetaminophen overdose, only the first overdose treated with intravenous acetylcysteine was examined. Hepatotoxicity may have occurred in subsequent admissions.
-Evaluable data were available from a total of 148 pediatric patients (less than 16 years of age) who were admitted for poisoning following ingestion of acetaminophen, of whom 23 were treated with intravenous acetylcysteine. There were no deaths of pediatric patients. None of the pediatric patients receiving intravenous acetylcysteine developed hepatotoxicity while two patients not receiving intravenous acetylcysteine developed hepatotoxicity. The number of pediatric patients is too small to provide a statistically significant finding of efficacy; however the results appear to be consistent to those observed for adults.
-ACETADOTE® (acetylcysteine) Injection
-Package Insert, page 11 of 12
-Reference ID: 4044640

+acetaminophen overdose over a 16-year period. Of the 1749 patients, 65% were female, 34% were male and than 1% was transgender. Ages ranged from 2 months to 96 years, with 72% of the patients falling in the 40-year-old age bracket. A total of 399 patients received acetylcysteine treatment. A post-hoc analysis identified 56 patients who (1) were at high or probable risk for hepatotoxicity (APAP greater than 150 mg/L at the 4-hour line according to the Australian nomogram) and (2) had a liver function test. Of the 53 patients who were treated with intravenous acetylcysteine (300 mg/kg intravenous acetylcysteine administered over 20-21 hours within 8 hours, two (4%) developed hepatotoxicity (AST or ALT greater than 1000 U/L). Twenty-one of 48 (44%) patients treated with acetylcysteine after 15 hours developed hepatotoxicity. The actual number of hepatotoxicity outcomes may be higher than what is reported here. For patients with multiple admissions for acetaminophen overdose, only the first overdose treated with intravenous acetylcysteine was examined. Hepatotoxicity may have occurred in subsequent admissions.
+Evaluable data were available from a total of 148 pediatric patients (less than 16 years of age) who were admitted for poisoning following ingestion of acetaminophen, of whom 23 were treated with intravenous acetylcysteine. There were no deaths of pediatric patients. None of the pediatric patients receiving intravenous acetylcysteine developed hepatotoxicity while two patients not receiving intravenous acetylcysteine developed hepatotoxicity. The number of pediatric patients is too small to provide a statistically significant finding of efficacy; however the results appear to be consistent to those observed for adults.

+16 HOW SUPPLIED/STORAGE AND HANDLING

+ACETADOTE (acetylcysteine) injection is available as a 20% solution (200 mg/mL) in 30 mL single-dose vials. Each single dose vial contains 6 g/30mL (200 mg/mL) of ACETADOTE injection. ACETADOTE is sterile and can be used for intravenous administration. It is available as follows:

- +•
- +30 mL vials, carton of 4 (NDC 66220-207-30)

+Page 11

+Reference ID: 4513653

-16 HOW SUPPLIED/STORAGE AND HANDLING

-ACETADOTE (acetylcysteine) injection is available as a 20% solution (200 mg/mL) in 30 mL single-dose vials. Each single dose vial contains 6 g/30mL (200 mg/mL) of ACETADOTE injection. ACETADOTE is sterile and can be used for intravenous administration. It is available as follows:

-
- 30 mL vials, carton of 4 (NDC 66220-207-30)
- The stopper in the ACETADOTE vial is formulated with a synthetic base-polymer and does not contain Natural Rubber Latex, Dry Natural Rubber, or blends of Natural Rubber.
- Store unopened vials at controlled room temperature, 20° to 25°C (68° to 77°F) [See USP Controlled Room Temperature].
- +The stopper in the ACETADOTE vial is formulated with a synthetic base-polymer and does not contain Natural Rubber Latex, Dry Natural Rubber, or blends of Natural Rubber.
- +Store unopened vials at controlled room temperature, 20°C to 25°C (68°F to 77°F) [See USP Controlled Room Temperature].
- Advise patients and caregivers that hypersensitivity reactions related to administration and infusion may occur during and after ACETADOTE treatment, including hypotension, wheezing, shortness of breath and bronchospasm [see Warnings and Precautions (5.1)].
- For specific treatment information regarding the clinical management of acetaminophen overdose, please consult your regional poison center at 1-800-222-1222, or alternatively, a special health professional assistance line.
- +Advise patients and caregivers that hypersensitivity reactions related to administration and infusion may occur during and after ACETADOTE treatment, including hypotension, wheezing, shortness of breath and bronchospasm [see Warnings and Precautions (5.1)].
- +For specific treatment information regarding the clinical management of acetaminophen overdose, please consult your regional poison center at 1-800-222-1222, or alternatively, a special health professional assistance line for

-ACETADOTE® (acetylcysteine) Injection
-Package Insert, page 12 of 12
-Reference ID: 4044640
+Page 12
+Reference ID: 4513653