VENTURA COUNTY
HEALTH CARE PLAN

Prior Authorization DRUG Guidelines

MESNEX (Mesna)

Effective Date: 7/28/05

Date Developed: 7/11/05 by C. Wilhelmy MD

Last Approval Date: 1/26/16, 1/24/17, 1/23/18, 1/22/19, 2/18/20, 2/2/21, 8/3/21, 2/1/22, 1/31/23, 2/13/24, 2/18/25

Mesnex is an antidote. In blood, mesna is oxidized to dimesna which in turn is reduced in the kidney back to mesna, supplying a free thiol group which binds to and inactivates acrolein, the urotoxic metabolite of ifosfamide and cyclophosphamide. Acrolein can ~~thus~~ cause hemorrhagic cystitis during chemotherapy. Mesnex is administered to prevent this.

Pre-Authorization Criteria:
Preventive agent to reduce the incidence of ifosfamide-induced hemorrhagic cystitis

Off-Label: Prevention of cyclophosphamide-induced hemorrhagic cystitis (with high-dose cyclophosphamide); Prevention of cyclophosphamide-induced hemorrhagic cystitis in patients with rheumatic or autoimmune disorders

NOTE: VCHCP requires that Mesnex be prescribed by an oncologist.

DOSING: ADULTS

Standard-dose ifosfamide: **IV:** Each mesna dose is equal to 20% of the daily ifosfamide dose given for 3 doses: With the ifosfamide dose (hour 0), hour 4, and at hour 8 after the ifosfamide dose (total daily mesna dose is 60% of the daily ifosfamide dose).

Oral mesna (following IV mesna; for ifosfamide doses ≤2 g/m^2/day): Mesna dose (IV) is equal to 20% of the daily ifosfamide dose at hour 0, followed by 2 mesna doses (orally), each equal to 40% of the daily ifosfamide dose given 2 and 6 hours after the ifosfamide dose (total daily mesna dose is 100% of the daily ifosfamide dose). **Note:** If the oral mesna dose is vomited within 2 hours of administration, repeat the oral mesna dose or administer IV mesna.

NOTE: numerous dosing regimens; refer to product literature or UpToDate

DOSAGE FORMS

Injection, solution: 100 mg/mL (10 mL)[contains benzyl alcohol]

Tablet:400

WARNINGS / PRECAUTIONS: Allergic reactions have been reported; patients with autoimmune disorders may be at increased risk. Symptoms ranged from mild hypersensitivity to systemic anaphylactic reactions. Drug rash with eosinophilia and systemic symptoms and bullous/ulcerative skin and mucosal reactions consistent with Stevens-Johnson syndrome or toxic epidermal necrolysis have been reported. I.V. formulation contains benzyl alcohol; do not use in neonates or infants.

REFERENCES

1. Ben Yehuda, A, Heyman, A, Steiner Salz, D. False Positive Reaction for Urinary Ketones With Mesna. Drug Intell Clin Pharm 1987; 21:547.

2. Brock, N, Pohl, J. The Development of Mesna for Regional Detoxification. Cancer Treat Rev1983; 10(Suppl A):33.

3. Cancer Chemotherapy. Med Lett Drugs Ther 1989; 31:49.

4. Pohl, J. Toxicology, Pharmacology, and Interactions of Sodium 2-Mercaptoethane Sulfonate (Mesna). Curr Chemotherapy 1981; 2:1387.

5. Schoenike, SE, Dana, WJ. Ifosfamide and Mesna. Clin Pharm 1990; 9:179.

6. Siu, LL, Moore, MJ. Use of Mesna to Prevent Ifosfamide-Induced Urotoxicity. Support CareCancer 1998; 6:144.

7. Hensley ML, Hagerty KL, Kewalramani T, et al. American Society of Clinical Oncology 2008 clinical practice guideline update: use of chemotherapy and radiation therapy protectants. J Clin Oncol. 2009;27(1):127-145. doi: 10.1200/JCO.2008.17.2627

8. Khaw SL, Downie PA, Waters KD, et al, “Adverse Hypersensitivity Reactions to Mesna as Adjunctive Therapy for Cyclophosphamide,” Pediatr Blood Cancer, 2007, 49(3):341-3

9. Mesnex (mesna) [prescribing information]. Deerfield, IL: Baxter Healthcare Corporation; December 2018

10. Zhang Y, Kawedia JD, Myers AL, et al. Physical and chemical stability of high-dose ifosfamide and mesna for prolonged 14-day continuous infusion. J Oncol Pharm Pract. 2014;20(1):51-57. doi: 10.1177/1078155213478284.

11. Schoenike SE and Dana WJ, “Ifosfamide and Mesna,” Clin Pharm, 1990, 9(3):179-91.

12. Centers for Disease Control (CDC). Neonatal deaths associated with use of benzyl alcohol—United States. MMWR Morb Mortal Wkly Rep. 1982;31(22):290-291.

13. Goren MP, Lyman BA, Li JT. The stability of mesna in beverages and syrup for oral administration. Cancer Chemother Pharmacol. 1991;28(4):298-301.

14. Khaw SL, Downie PA, Waters KD, et al, “Adverse Hypersensitivity Reactions to Mesna as Adjunctive Therapy for Cyclophosphamide,” Pediatr Blood Cancer, 2007, 49(3):341-3.

15. Mace JR, Keohan ML, Bernardy H, et al, “Crossover Randomized Comparison of Intravenous Versus Intravenous/Oral Mesna in Soft Tissue Sarcoma Treated With High-Dose Ifosfamide,” Clin Cancer Res, 2003, 9(16 Pt 1):5829-34.

16. Monach PA, Arnold LM, Merkel PA. Incidence and prevention of bladder toxicity from cyclophosphamide in the treatment of rheumatic diseases: a data-driven review [published correction appears in Arthritis Rheum. 2010;62(8):2555]. Arthritis Rheum. 2010;62(1):9-21.

Revision History:
Date Revised: 10/10/11 by A. Reeves, MD
Date Reviewed/No Updates: 1/16/13 by A. Reeves, MD
Date Approved by P&T Committee: 7/28/05; 10/25/11; 4/24/12; 1/29/13
Date Reviewed/No Updates: 1/28/14 by C. Sanders, MD
Date Approved by P&T Committee: 1/28/14
Date Reviewed/No Updates: 1/13/15 by C. Sanders, MD
Date Approved by P&T Committee: 1/27/15
Date Reviewed/No Updates: 1/26/16 by C. Sanders, MD; R. Sterling, MD
Date Approved by P&T Committee: 1/26/16
Date Reviewed/No Updates: 1/24/17 by C. Sanders, MD; R. Sterling, MD
Date Approved by P&T Committee: 1/24/17
Date Reviewed/No Updates: 1/23/18 by C. Sanders, MD; R. Sterling, MD
Date Approved by P&T Committee: 1/23/18
Date Reviewed/No Updates: 1/22/19 by C. Sanders, MD; R. Sterling, MD
Date Approved by P&T Committee: 1/22/19
Date Reviewed/No Updates: 2/18/20 by H. Taekman, MD; R. Sterling, MD
Date Approved by P&T Committee: 2/18/20
Date Reviewed/No Updates: 2/2/21 by H. Taekman, MD; R. Sterling, MD
Date Approved by P&T Committee: 2/2/21
Date Reviewed/No Updates: 2/1/22 by H. Taekman, MD; R. Sterling, MD
Date Approved by P&T Committee: 2/1/22
Date Reviewed/No Updates: 1/31/23 by H. Taekman, MD; R. Sterling, MD
Date Approved by P&T Committee: 1/31/23
Date Reviewed/No Updates: 2/13/24 by H. Taekman, MD; R. Sterling, MD
Date Approved by P&T Committee: 2/13/24
Date Reviewed/Updated: 2/18/25 by H. Taekman, MD; R. Sterling, MD
Date Approved by P&T Committee: 2/18/25

Revision Date	Content Revised (Yes/No)	Contributors	Review/Revision Notes
1/24/17	No	Catherine Sanders, MD; Robert Sterling, MD	Annual review
1/23/18	No	Catherine Sanders, MD; Robert Sterling, MD	Annual review
1/22/19	No	Catherine Sanders, MD; Robert Sterling, MD	Annual review
2/18/20	No	Howard Taekman, MD; Robert Sterling, MD	Annual review
2/2/21	No	Howard Taekman, MD; Robert Sterling, MD	Annual review
8/3/21	Yes	Howard Taekman, MD; Robert Sterling, MD	Updated dosing information, description and references. Formatting changes
2/1/22	No	Howard Taekman, MD; Robert Sterling, MD	Annual review
1/31/23	No	Howard Taekman, MD; Robert Sterling, MD	Annual review
2/13/24	No	Howard Taekman, MD; Robert Sterling, MD	Annual review
2/18/25	Yes	Howard Taekman, MD; Robert Sterling, MD	Updated preauthorization criteria. Added Off-Label Use and updated dosing sections