

Formalin (Formaldehyde) for Hemorrhagic Cystitis or Radiation Proctitis

Formalin is a chemical compound made of hydrogen, oxygen, and carbon best known for its preservative and antibacterial properties. It is typically used for specimen preservation. However, it has some evidence for use off-label in hemorrhagic cystitis or radiation proctitis for patients who have failed other therapies.

Proposed Mechanism

- Stops hemorrhaging capillary occlusion and protein fixation at the level of the urothelium

Administration

- Formalin solution 1% to 4% has been used in literature for these indications:
 - Hemorrhagic Cystitis
 - Intravesical instillation, indwelling for 10-15 minutes and then drained, followed by with continuous irrigation with sterile water and/or saline
 - Radiation Proctitis
 - Topical irrigation for 30 sec to 5 min
 - Topical use with gauze pads

Pharmacy Procedure

If receiving a call inquiring about the procurement/ordering/dispensing of Formalin, please kindly inform the caller that:

- The formalin that is used is not pharmaceutical grade, therefore pharmacy is not involved in its procurement and pharmacy does not stock it.
 - It will also not go through the pharmacy non-formulary process.
- Refer the caller to the pathology group at EXT 8811.
 - They receive non-pharmaceutical grade formalin 10% in bulk non-sterile containers.

References

1. Ziegelmann MJ, Boorjian SA, Joyce DD, Montgomery BD, Linder BJ. Intravesical formalin for hemorrhagic cystitis: A contemporary cohort. *Can Urol Assoc J*. 2017 Mar-Apr;11(3-4):E79-E82. doi: 10.5489/cuaj.4047. Epub 2017 Mar 16. PMID: 28360951; PMCID: PMC5365393.
2. Ma TH, Yuan ZX, Zhong QH, et al. Formalin irrigation for hemorrhagic chronic radiation proctitis. *World J Gastroenterol*. 2015;21(12):3593-3598. doi:10.3748/wjg.v21.i12.3593