INTRAVESICAL EPIRUBICIN ADMINISTRATION IN A UROLOGY DEPARTMENT

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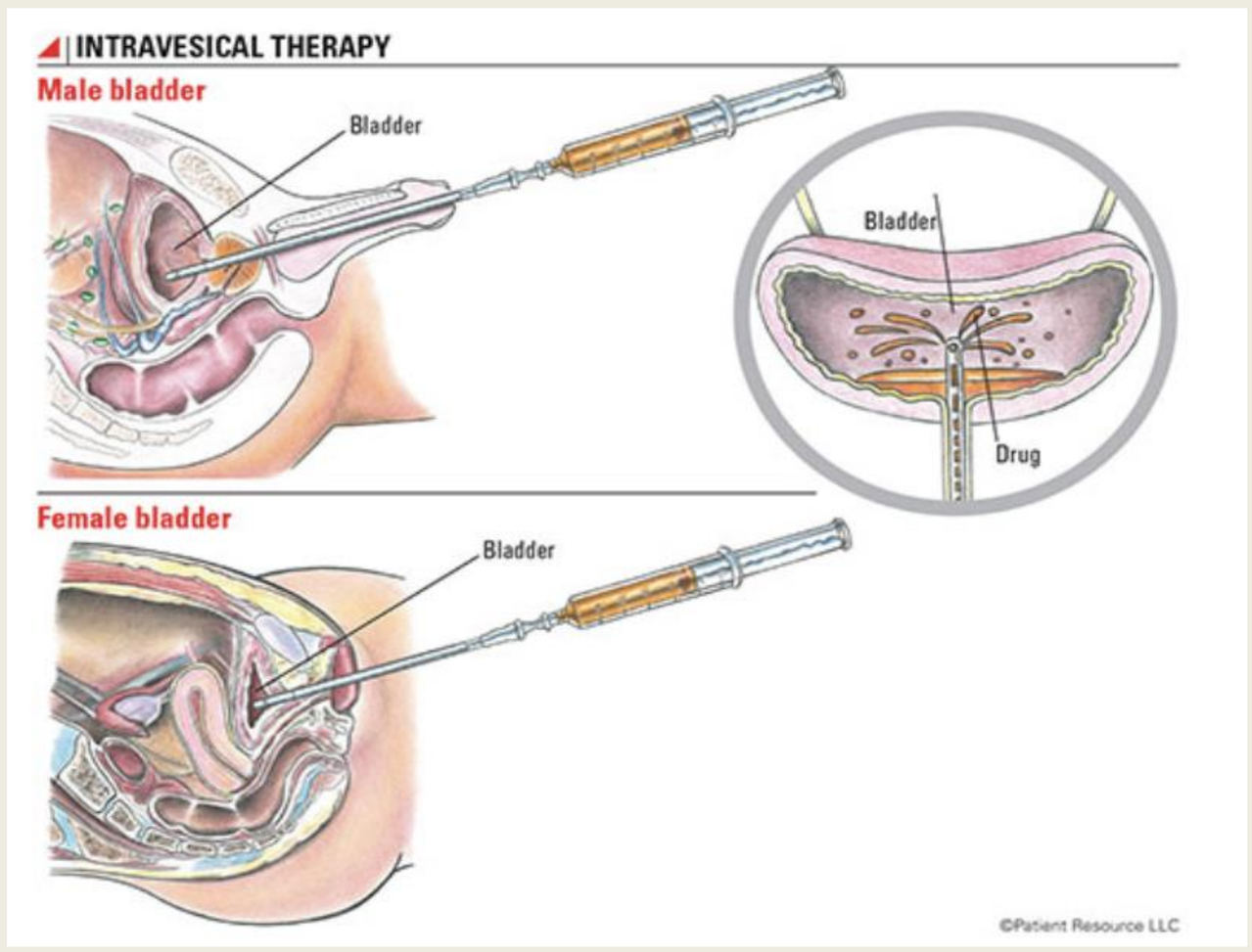
Background

A chemotherapeutic agent administered into the bladder is indicated for the treatment of early-stage bladder cancer. Examples for cytostatics that can be administered intravesically include epirubicin, mitomycin, doxorubicin. During bladder instillation, the drug is diluted to the appropriate volume in a syringe and injected through a urinary catheter into the bladder. (Figure 1)

Following administration, the end of the catheter is clamped to press the chemotherapeutic agent into the bladder for the indicated duration of therapy (approximately 1 hour). During the one-hour interval, the drug exerts its cell-killing effect locally on the wall of the bladder. After the required time, the drug is drained into the catheter bag and the urine contaminated with cytostatics is discharged.



(Figure 1) Intravesical administration
Resource: https://www.helderbergurology.co.za/2020/01/06/bcg-instillations/

Problem

Bladder instillation with chemotherapeutic agents like epirubicin carries an increased risk of cytostatic contamination of the environment. A proper practice does not only include appropriate preparation, adequate administration, surface decontamination, hazardous waste management. The careful education of the patients are also equally important. In the Hungarian practice no general guidelines exist on the safe handling of intravesical cytostatics.

Aim and objectives

An overarching and complex methodology was created for handling intravesical chemotherapeutics during the full process of bladder instillation. It has been implemented in the everyday practice. Prior to clinical pharmacy services at our urology department, chemoinstillates were prepared without the use of closed system devices at the department. There were no guidelines for cytostatic waste management and cleaning. Our goal with the protocol was to reduce contamination from the use of cytostatics, increase staff and patient safety, and introduce proper hazardous waste management. We implemented the practice by the trainings and we continuously monitor the practical implementation.

Materials and methods

The proposed methodology encompasses procurement, preaparation and administration techniques. The preparation process was centralised from the urology department to a central cytotoxic laboratory, where trained pharmacy personnel prepare the instillation solutions under controlled, aseptic conditions. Closed system transfer devices were also implemented for an additional layer of safety for both healthcare workers and patients. (Figure 2)

The product should be administrated by the operating doctor in the operating room, immediately after catheterisation if it is possible. (sterile conditions, wearing cytostatic-resistant sterile protective gloves and FFP3 mask, following asepsis and antiseptic rules)

The developed protocol also mandates the provision of appropriate tools and materials within the urology department such as decontaminating solution, metal tools, cytotoxic-impermeable gloves not only for the administration but for the safe and proper cleaning and generated waste management. The contaminated urine and tools for one use must be disposed as hazardous waste in a double-wall cardboard box and in a hazardous material disposal bag. (Figure 2)

In accordance with the hospital's pharmaceutical care efforts, patient information brochures were created and printed to be handed out to patients as a summary that fully informs them about their therapies, possible side effects and the precautionary measures to precent cytostatic contamination in their homes. We have summarized the most important informations and tasks before, during and after the procedure, by following the patient can help the success of the therapy and reduce the contamination of the environment.

(Figure 2) Tools and materials of intravesical chemoinstillation

Results

Adherence to the safe procedures with cytostatics is essential for all individuals involved, not only for those who provide the care, but also, after an adequate education, for patients receiving the therapy.

Within this project, all heathcare workers involved in the chemotherapy bladder instillation were trained, and the procedures were continuously monitored.

The introduction of clinical pharmacy services in the everyday practice of the urology department, a safer and more modern patient care could be achieved. The enhanced cooperation between doctors, nurses and pharmacists also served an improved patient adherence.

Clinical pharmacists cooperating with educate every patient receiving cytotoxic bladder instillation, and answer any question regarding to the therapy at any stage of the procedure.

Conclusion

The aim of the development of such protocol and its practical implementaion was to avoid or minimize the cytotoxic contamination of healthcare workers, patiens and objects as much as possible. The implementation of clinical pharmacy services within the urology setting did not only improve patient safety but also facilitated interprofessional collaboration and the empowering of patients via pharmaceutical care delivered by their bedside.

Resources

Chemotherapy into the bladder. Cancer Research UK. 2019; Guidelines for the Administraion of Intravesical Cytotoxic and Immunotherapeutic drugs within the Hospital Setting. WA Cancer and Palliative Care Network. 2010

Intravesical chemotherapy for bladder cancer. Macmillan Cancer Support. 2018; Intravesical Administraion of Therapeutic Medication fo the Treatment of Bladder Cancer. SUNA 2020

Intravesical Instillaion with Mitomycin-C or BCG in Non-Muscle Invasive Bladder Cancer. EAUN 2015