**Improving Efficiency in Elastomeric Pump Filling Using DIANA ONCO-PLUS, a Semi-Automated Compounding Device**

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**Background** La Fe Universitario y Politécnico Hospital is a tertiary-care hospital with approximately 1,000 beds serving a population of 210,000 people. The pharmacy department owns 4 vertical laminar flow hoods where more than 35,000 chemotherapy treatments, including the filling of 800 elastomeric pumps, are prepared per year.

**Purpose** To compare both the time spent and the accuracy in the filling of elastomeric pumps (EPs) with fluorouracil by two different methods: DIANA ONCO-PLUS, a semi-automated compounding system (ICU Medical Europe), and the normal manual method used in the hospital’s Chemotherapy Unit (CU). The secondary endpoint was to assess user satisfaction with the two methods.

**Materials and Methods** For 4 consecutive weeks, EPs were filled by trained nurses two days per week. The first day DIANA ONCO-PLUS was used and the second day the EPs were filled manually. To avoid bias, every week a different nurse filled the EPs using both methods. Filling time was measured by a different nurse using a conventional chronograph and the accuracy was evaluated by weight of EP (before and after filling). Nurses’ satisfaction was assessed by a questionnaire.

**Results** The filling of sixty-five EPs was evaluated. The filling mean time was 4.25 min with the manual method and 3.84 min with DIANA ONCO-PLUS (p = 0.008). If purge is considered, the mean time was 6.65 min and 5.52 min respectively (p < 0.001). The mean relative error in the filling was 0.735% in manual method and 0.314% in DIANA method (p = 0.006) without any clinical relevance. There was no user-related variability. Nurses were very satisfied using DIANA for filling EP. They considered DIANA more comfortable and safe.

**Conclusions** DIANA ONCO-PLUS is a more efficient and accurate method to fill EPs than the manual method. The differences found were user-independent.

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No conflict of interest.

**Intradialytic Calciphylaxis in Renal Patients. Development of an Injectable Solution of 25% Sodium Thiosulfate for Treatment**

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**Background** Calciphylaxis (calcific uremic arteriolopathy) is the ischemic ulceration of the skin caused by the disseminated calcification of the subcutaneous tissue and small arteries as a consequence of hyperparathyroidism in uremic patients.

**Purpose** To describe the method of preparation and checking of an injectable solution of 25% sodium thiosulfate for the treatment of intradialytic calciphylaxis in renal patients.

**Materials and Methods** Sodium thiosulfate is an antioxidant, vasodilator and calcium chelator. The preparation process for the solution of 25% sodium thiosulfate is: Ingredients: Sodium thiosulfate pentahydrate: 25 g, water for injection (WFI): qs 100 ml. Preparation: Weigh the amount of sodium thiosulfate in a sterile beaker. Then, working in a horizontal laminar flow hood, boil WFI to eliminate CO₂. Dissolve the thiosulfate in about 80 ml of boiled water. Check that the pH of the solution is between 6 and 9.5, if it is not, adjust with HCl or NaOH. Flush into a 100 ml volumetric flask and make up to volume. Filter with a double 0.22 micron filter. Finally pack with 50 ml syringe into a sterile glass bottle and label.

**Results** The result is a solution of 100 ml of 25% sodium thiosulfate, transparent, sterile and stable for 30 days in refrigerator. For QC a visual particulate sterility check is performed by sowing in aerobic and anaerobic cultures and a bubble point test to verify the integrity of the phials.

**Conclusions** Proper preparation and checking of the 25% solution of sodium thiosulfate has guaranteed its parenteral administration is safe. The treatment is effective and well tolerated, helping patients and improving their quality of life.

No conflict of interest.