SERVIZIO SANITARIO REGIONALE
EMILIA-ROMAGNA
Azienda Ospedaliero - Universitaria di Modena

OUTPATIENT ADMINISTRATION OF DOSE-ADJUSTED ETOPOSIDE, PREDNISONE, VINCRISTINE, CYCLOPHOSPHAMIDE, DOXORUBICIN (DA-EPOCH) FOR NON-HODGKIN LYMPHOMA

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1. What was done?

DA-EPOCH (etoposide, prednisone, vincristine, cyclophosphamide and doxorubicin) -based chemotherapy has been shown to be highly effective and well tolerated in patients with various type of non-Hodgkin lymphoma.

It is traditionally administered inpatient because of its complex 4 days protocol and number of involved medications.

These routine admissions are costly, disruptive and isolating to patients.

Here we describe our experience transitioning from inpatient to outpatient setting.

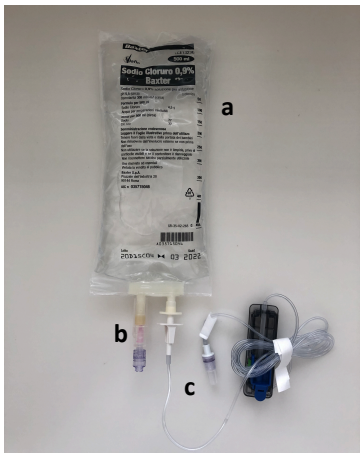

Figure 1 Example of final equipped bag **a.** IV bag **b.** Spike needle-free access (BTC, Italia) **c.** CADD® High-Volume Administration set (Smiths Medical).

2. Why was it done?

Because of the need to administer etoposide, vincristine and doxorubicin over a continuous 96-hour period, patients are traditionally hospitalized. Frequently, these admissions may be delayed because of bed shortages.

Previous studies have shown that EPOCH-containing regimens can be safely administered in the outpatient setting, thus decreasing inpatient bed use and overall health care costs.

Home-based chemotherapy is normally preferred by patients and helps reduce the risk of hospital-acquired infections; furthermore, other aspects such as functional decline and social isolation are minimized.

Beginning in August 2019, we introduced an outpatient EPOCH-based chemotherapy model with portable infusion pumps and have already treated 9 patients (August 2020).

Figure 2 A detail of special devices used to prepare the IV bag.

3. How was it done?

We purchased 3 CADD-SOLIS® infusion pumps (Smiths Medical) and connected them to the IV bags containing chemotherapy.

One of the main issues we observed in this procedure was the flow disturbances due to the presence of small air bubbles in the pump delivery line so we tried to develop a method aiming to reduce this effect.

We changed the first type of device we used to add medication to IV bags with a new consisting of an irreversible spike needle-free access to IV bag (BTC, Italia) inserted to the medication port of the IV bag. Into the spiking port we insert the CADD® High-Volume Administration Set (Fig. 1-2).

It is crucial to remove all the air inside the IV bag and make sure there is no extra air injected into the bag when adding medication, finally do not forget to fully prime the tubing.

The pump comes with a lightweight backpack (Fig. 3) that has special, labeled pockets inside to hold tubing, supplies and the pump. It has room for over 1 liter of fluids.
It has adjustable straps, so it is very comfortable.

Figure 3 The equipped IV bag is placed into a lightweight backpack supplied with the pump.

4. What has been achieved?

Outpatient EPOCH administration was associated with cost savings of approximately 400.000 € for hospital day avoidance (30 days/patient).

In addition to cost savings, outpatient administration was preferred by patients to inpatient chemotherapy.

5. What next?

Outpatient treatments would lead to changes in how both patients and providers relate to cancer care.

Transitioning care out of the hospital and related cost reduction allowed for additional investments in public health.

Aknowledgements

Many thanks to Giovanna Leonardi for her guidance, support and insightful comments; Amedeo Vasile for sharing his time and expertise to improve this work. Finally to all the patients who participated in this research with enthusiasm and patience.

eahp european association of hospital pharmacists

GPI PC10228

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