AMBULATORY HIGH DOSE METHOTREXATE ADMINISTRATION : Experience of the Pediatric Service of Hematology and Oncology (PSHO) of Rabat.

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INTRODUCTION

In 2013, the pediatric service of hematology and oncology (PSHO) of Rabat received approximately 300 new cases annually [2]. Significant therapeutic advances are currently achieving a cure of nearly 4 out of 5 children [1]. Of the available therapeutic arsenal, chemotherapy occupies an important place particularly in cancers including acute lymphoblastic leukemia (ALL), non-Hodgkin's lymphoma (NHL) and osteosarcoma. Access to care is effective for 60-70% of children with cancer in Morocco [2], helped by the development of ambulatory treatment. Some therapeutic combinations lend themselves to ambulatory use, but this is done at the cost of rigorous monitoring. Of these molecules, methotrexate (MTX) is a part, and is used in high doses (HD).
Our objective was to take stock of the use of the HDMTX in PSHO of Rabat by reporting their experience in this matter, while answering the question of feasibility and suggest the improvements to be made in order to extend the experience to other pilot units of the GFAOP.

MATERIALS AND METHODS

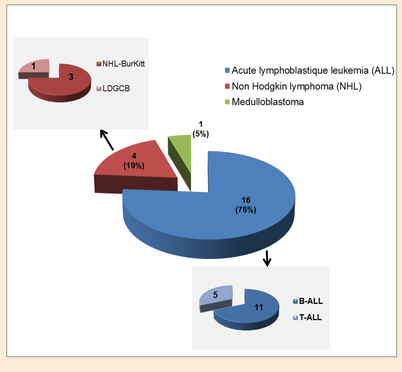
This was an observational study from February 10 to May 30, 2016 and for any patient admitted for an HDMTX cure, whatever the underlying pathology. The administered treatment was in accordance with the protocol adopted in the department for the type of pathology treated. Several variables (epidemiological, clinical, biological and evolutionary) were studied. HDMTX was given intravenously over 3 hr, after urine alkalinization.
Monitoring focuses mainly on clinical aspects. It was foreseen in the protocol, the monitoring of serum concentrations of MTX, but not made due to lack of availability of the technical platform. For the "rescue" with folinic acid, the posology was 15 mg/m²/6h. A standard dilution with 5 ml of solution (D5W) was made, making it possible to obtain an equivalence of 10 mg of folinic acid per ml of reconstituted solution. The first dose of folinic acid, begun exactly at 24 hrs following HDMTX by mouth and was started in hospital. The eleven next doses were administered to patients' homes every 6 hours.

RESULTS

1. EPIDEMIOLOGICAL ASPECTS:
Thirty cases (30) of HDMTX administration in 21 patients, among 915 chemotherapy all type → HDMTX frequency: **3.27%**, including:
- 1 patient has been seen 3 times, that is 3 cases
- 7 patients were seen twice, this is 14 observations

Twelve (12) were male and nine (9) female, a sex ratio of 1.33.
Mean age: 7 years.

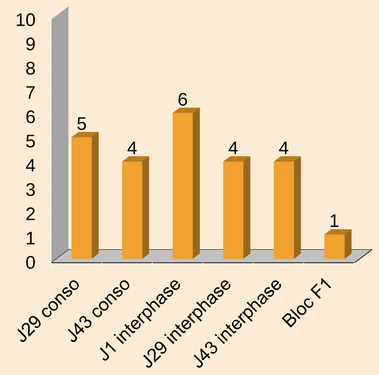
2. DIAGNOSIS



- LAL: 14 cases of high risk, 1 case of standard risk and 1 case of high risk on relapse.
- NHL: of Murphy Stage III for Burkitt NHL cases and all of therapeutic B-group.

RESULTS

- LAL / Phase and Cure number :



- NHL: COPADM cures in 3 cases and CYM cures in 2 cases.

4. HDMTX ADMINISTRATION
- ❖ Average total dose of ambulatory HDMTX: **4g**
- ❖ Average dose of folinic acid: **12.96 mg / 6h**
- ❖ Average urine pH, during administration of HDMTX: **8** (22/30 cases). Diuresis not quantified systematically.
- ❖ Standard IV hydration according to weight, combined with oral hydration.

Immediates side effects (isolated or associated): in 8 cases	Late side effects (within 10 days of treatment): in 4 cases
• Nausea, • Vomiting, • Headache, • Drowsiness, • Pruritus.	• 1 case of feverish neutropenia (PNN = 290), on post-cure HDMTX of J43 of interphase → following cure at 2/3 of the dose. • 1 case of fever with pallor and mucositis grade II to III to J2 post-cure of COPADM MTX-HD → hospitalization. • 1 case of fever, followed by anemia at J7 post-cure of HDMX of J43 consolidation, with transfusion need and delay to next cure. • 1 case of headache + fever at J3 post-cure of J29 HDMTX of consolidation → hospitalization with a normal income balance

CONCLUSIONS

HDMTX is an integral part of the management of many pathology in oncology. Ambulatory HDMTX is done at the PSHO of Rabat, especially for ALL and NHL. The follow-up of 30 cases (3.27%) of ambulatory HDMTX in PSHO of Rabat, without serum concentration of MTX monitoring, and without major incidents was a reality. In the lack of a predictive marker and specific management, the optimization of the benefits associated with its use depends above all on prevention. Hydration precautions and systematic leucovorin rescue, were strictly done at Rabat. Thirty cases is not a sufficient number to draw a conclusion of the safety in outpatient; so a better monitoring of the parameters (diuresis, urine pH, hydration) would "guarantee" more safety of use, for the benefit of the patient, family and caregivers.

REFERENCES

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