TOLERANCE PROFILE TO ANTI-THYMOCYTE IMMUNOGLOBULIN TREATMENT AND ITS RELATION TO INFECTIOUS PARAMETERS IN PAEDIATRIC PATIENTS

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Background and Importance

Rabbit anti-thymocyte immunoglobulin (ATG) is used to prevent or treat graft-versus-host disease (GVHD). There have been few studies on tolerance to administration of ATG in pediatric patients. It is related to immnomodulatory manifestations that cause an inflammatory response capable of triggering clinical and analytic manifestations similar to those of an infection resulting in the administration of antibiotic in most patients.

Aim and Objectives

To describe the tolerance to the administration of ATG in pediatric patients with BMT and to analyze its relationship with clinical and analytic manifestations similar to an infection.

Materials and Methods

- Observational, retrospective study
- Included pediatric patients with BMT
- Received ATG: December 2010 - February 2019

Design

Variables collected
- Demographic: sex and age
- BMT related: pathology, sources of Hematopoietic Stem Cells (HSC), donor type
- Clinical symptoms: fever, temperature
  - secondary to ATG if 0-72h post-infusion
- Treatment: dose, premedication, side effects
- Analytics: maximum procalcitonin (PCT) and C-reactive protein (CRP), liver and kidney function markers
- Blood cultures

Source

Variables obtained from:
- Electronic/paper medical record
- Onco-hematologic electronic prescribing program

Results

**Demographic**

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<th>Sex and age</th>
<th>55.35% (31) males and median age of 7 years</th>
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**BMT related**

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<th>Underlying diseases</th>
<th>Oncological: mainly acute lymphoblastic leukemia (57.1%;32) Hematological: mainly medullary aplasia (33.3%;3)</th>
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**HSC**

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<th>Indication</th>
<th>92.8% (52) received ATG as prophylaxis and 7.2% (4) as refractory treatment of GVHD</th>
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**Dose**

| 1.25-2.5 mg/kg mainly 2 mg/kg (85.7%;48) during three days (two if haploidentical BMT) |

**Side effects**

| All patients received premedication, full dose, and no reduction in rate of administration or discontinuation |

**Clinical symptoms**

| Fever | 73.2% (41) patients (38.5ºC±0.5), appeared 11.28 hours after the start of the infusion and lasted 1.77±0.84 days |

82.9% (34) received broad-spectrum antibiotic treatment: mostly cefepime, amikacin, teicoplanin

During 7.61±3.79 days with positive blood culture in 7.3% (3)

Markers of infection were altered in most patients with averages of CRP: 97.55 mg/dL ± 59.45 and PCT: 35.57 ng/dL ± 28.55

Other side effects: hypertransaminasemia (33.92%;19), hyperbilirubinemia (5.36%;3), anaphylaxis (5.36%), capillary permeability syndrome (5.36%), alteration of renal function (1.78%;1) and Rash (1.78%)

Conclusion and Relevance

ATG treatment in pediatric patients is associated with mild side effects. ATG triggered analytical and clinical altered parameters that simulate infection so in its management empirical antibiotherapy is initiated and it could be stopped precociously in toxic fever by ATG.