INTRODUCTION: Reticulated platelets (RPs) are platelets recently released from the bone marrow, containing more cytoplasmic RNA components than mature platelets. RPs reflect the bone marrow thrombopoietic activity and studies have demonstrated their usefulness as a new haematology parameter to distinguish thrombocytopenias caused by hypoproduction from the ones caused by hyperdestruction of platelets.

PURPOSE OF THE STUDY: We present the RPs evaluation in peripheral blood samples from patients with destructive thrombocytopenias.

METHODS: Thirty patients with thrombocytopenia from our Department of Haematology, were enrolled in the present study, as showed in Fig. 1
- Control group: 15 healthy subjects.
- Platelet counts were performed on CELL-DYN © Sapphire haematology analyzer using optical (PLT) and immunologic (CD61) methodology.
- Reticulated platelet counts were done after staining with CD45 530.
- SPSS 15.0 was used for statistical analysis.

RESULTS: Very good (r=0.996) correlation between CD61 and PLTo counts – Fig. 2.

MEAN PLATELET VOLUME (MPV)
- Thrombocytopenic patients have a statistically significant higher MPV (11 fl ±3.2) than control group (8.7 fl ± 1.2).
- Negative correlation (r = - 0.632) between Optical Platelet Counts (PLTo) and MPV – Fig. 3.

RESULTS (cont.):

RETICULATED PLATELET COUNTS
- RPs % is higher in the non treated patients than in the control group: median 35.5% (minimum 6.4; maximum 98.6) vs median 3% (minimum 1.3; maximum 4.7). – Fig. 4
- The non treated patients (n=12), irrespective of the pathology, had much higher RPs% than patients already being treated (n=18) with appropriate therapeutics for each disease (median 6.5%; minimum 1.7; maximum 26.1). – Fig. 5
- Negative correlation (r=-0.643) between PLTo and RPs %– Fig. 6
- Student’s dependent samples t-test for the RPs% of the non treated patients group vs. control group counts: Means difference= 33.761; t=3.161 and p=0.0091

CONCLUSIONS:
- PLTo and CD61 counts have a very strong correlation, demonstrating that it is not necessary to use monoclonal CD61 platelet marker in these situations, bringing an economic advantage.
- Patients with destructive thrombocytopenia, when compared with normal controls, have higher platelet size and RPs counts; the ranges depend on the thrombocytopenia severity. This is possibly due to a higher release of immature platelets from the bone marrow, as a compensatory mechanism.
- A significant statistical difference is observed between non treated patients group RPs and control group.
- RPs counts are a simple and easily available test, representing a valuable diagnostic tool in distinguishing thrombocytopenias resulting of enhanced destruction from hypoplastic thrombocytopenias, leading to less invasive procedures with economical benefits.
- Further complimentary studies are already being performed.