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HEMOLYTIC ANEMIA AFTER KIDNEY TRANSPLANT WITH POLYCLONAL ANTIBODIES

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Background

Hemolytic anemia (HA) usually results from donor-derived antibodies against recipient's erythrocytes, hemolytic-uremic syndrome and immunosuppression (IMS). Although polyclonal antibodies (pAbs) can cause anemia it has rarely been described as HA.

Population and Methods

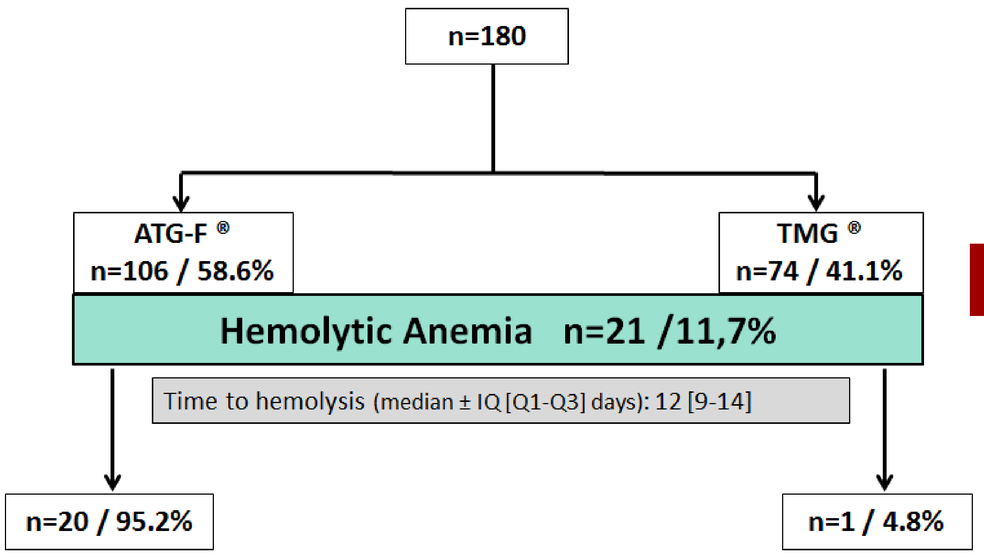
Single-center evaluation of HA incidence in the first 30 days of renal transplant (RT) in patients who randomly received ATG-*Fresenius* (ATG-F) or Thymoglobulin-*Genzyme* (TMG-G) between 01/2009 and 04/2016. HA was defined as decrease of at least 1g/dL hemoglobin (Hb) in 24 hours and a haptogloblin <30mg/dL.

Results

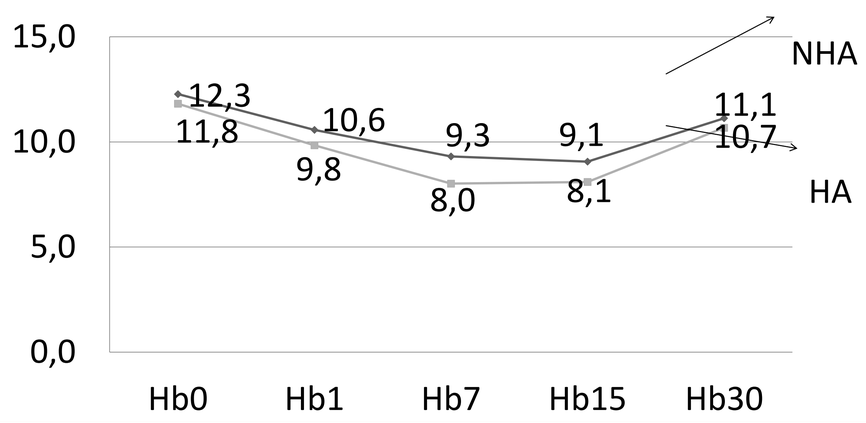
1 **Demographics of the population**

	n (%)
Male gender (n/%)	106 (59)
Age (mean ± SD, years)	50 ± 11
Live donor transplant (n/%)	11 (6)
Second renal transplant (n/%)	29 (16)
Preemptive (n/%)	2 (<1)

2 **Schematic represention of the study**



3 **Mean hemoglobin level in patients with and without hemolytic anemia**



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Variables	HA	NHA	*p*
Hemolytic Anemia (n /%)	21 / 11.7%	159 / 88.3%	-
Hemoglobin (mean ± SD) 7 days 15 days 30 days	 8 ± 1.2 8.1 ± 1 10.7 ± 2.2	 9.3 ± 1.5 9 ± 1.4 11.1 ± 1.5	 **≤0.001** **≤0.001** NS
EPO dose after RT (mean ± SD, UI/kg/week) 15 days 30 days	 19 238 ± 9575 12 952 ± 11 195	 12 339 ± 10 483 6182 ± 8390	 **0.005** **0.001**
Blood transfusions (median ± IQR [Q1-Q3])	2 [0-8]	0 [0-17]	**0.006**

No differences were found concerning cold ischemia, EPO necessity before RT, crossmatch by flow cytometry, presence of irregular antibodies, PRA, ABO and Rh incompatibility, DSA, Anti-HLA I and II, cumulative dose of ATG and TMG and maintenance IMS

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Variables (n/%)	ATG-F®	TMG®	*p*
First renal transplant	84 / 79.2%	68 / 91.9%	**0.021**
Positive PRA **(panel reactive antibodies)**	25 ± 30	11 ± 21	**0.000**

When comparing both groups (ATG-F vs TMG-G) no differences were found regarding the number of blood transfusions, iron therapy or ESA before RT, crossmatch by flow cytometry, presence of irregular antibodies, ABO and Rh incompatibility, DSA, Anti-HLA class I and I

In multivariate analysis, ATG-F was the only predictor of hemolysis (*p*=0.006; OR 2.9 [2.3 - 139]).

Conclusion

ATG-F was a strong predictor of HA in RT pts. Of all those who developed HA, 95% were treated with ATG-F. Overall, 18% (n=20) of ATG-F pts developed HA compared to 1% (n=1) with TMG-G.

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