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ANTI- P. aeruginosa ANTIBODIES IN PATIENTS NOT CHRONICALLY INFECTED AFTER EARLY ERADICATION TREATMENT

DANIELA DOLCE
AOU Meyer, Firenze

NESSUN POTENZIALE CONFLITTO D'INTERESSI DA DICHIARARE

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ANTI- *P. aeruginosa* ANTIBODIES IN PATIENTS NOT CHRONICALLY INFECTED AFTER EARLY ERADICATION TREATMENT

Dolce D[1], Bianchimani C[1], Campana S[1], Ravenni N[1], Francalanci M[1], Camera E[1], Orioli T[1], Cavicchi MC[1], Galici V[1], Neri AS[1], Terlizzi V[1], Taccetti G[1]

Cystic Fibrosis Center, Anna Meyer Children's University Hospital, Florence, Italy

Background

P. aeruginosa (Pa) lung infection causes a lung function decline and a systemic increase of anti-Pa serum antibodies. In the early phases of Pa infection early eradication treatment can clear the bacterium.

Aim

The purpose of this study was to evaluate, as marker of the eradication treatment in early stages of *P. aeruginosa* infection, the anti-Pa immune response in patients not chronically infected.

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Materials and methods

- A regular follow-up in the period 2008-2016
- 135 sera from 75 not chronically infected patients (median age 8.62 years, range 0.86-32.9)
- Enzyme-Linked Immuno Sorbent Assay (ELISA) for the presence of IgG antibodies against
- Pa sonicated (St-Ag) (serogroups 1-17)
  - (cut off >= 2.96 EU)
- Alkaline Protease (AP)
- Elastase (Ela)
- Exotoxin A (ExoA)
  - cut off borderline for titer > 500 and < 1250 and positive for titer >1250
- At the time of Pa detection (T0)
- After 6-12 months (T1)
- were diluted 1:100
- The One way Anova test ant the t- test between groups was performed.

Pa sonicated (St-Ag) (serogroups 1-17)



Alkaline Protease (AP), Elastase (Ela), Exotoxin A (ExoA)

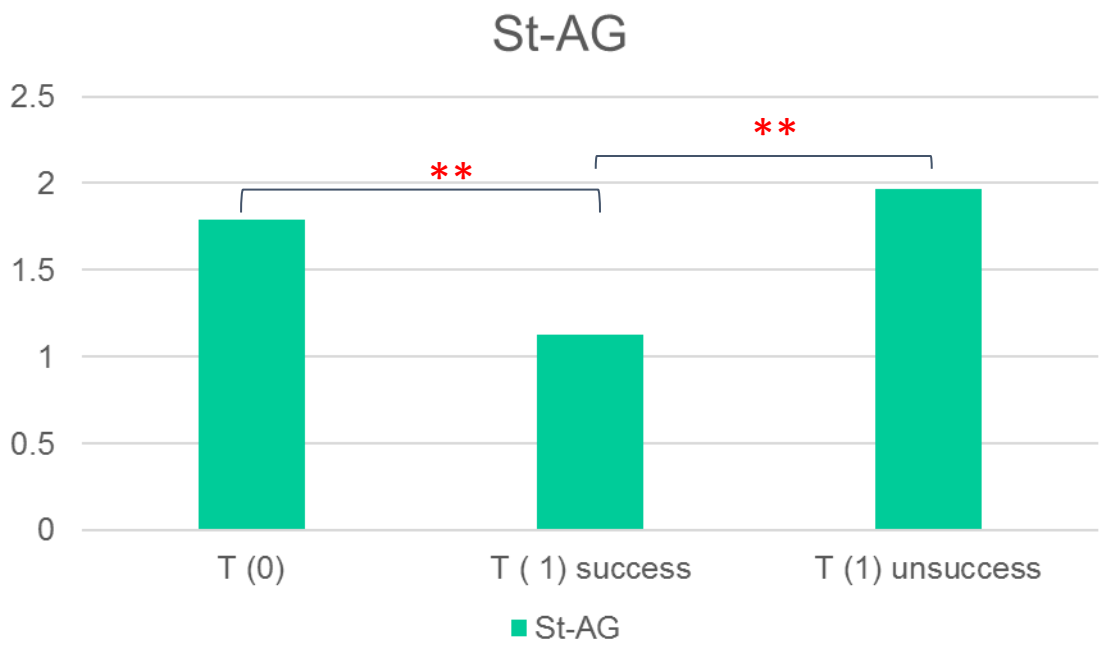


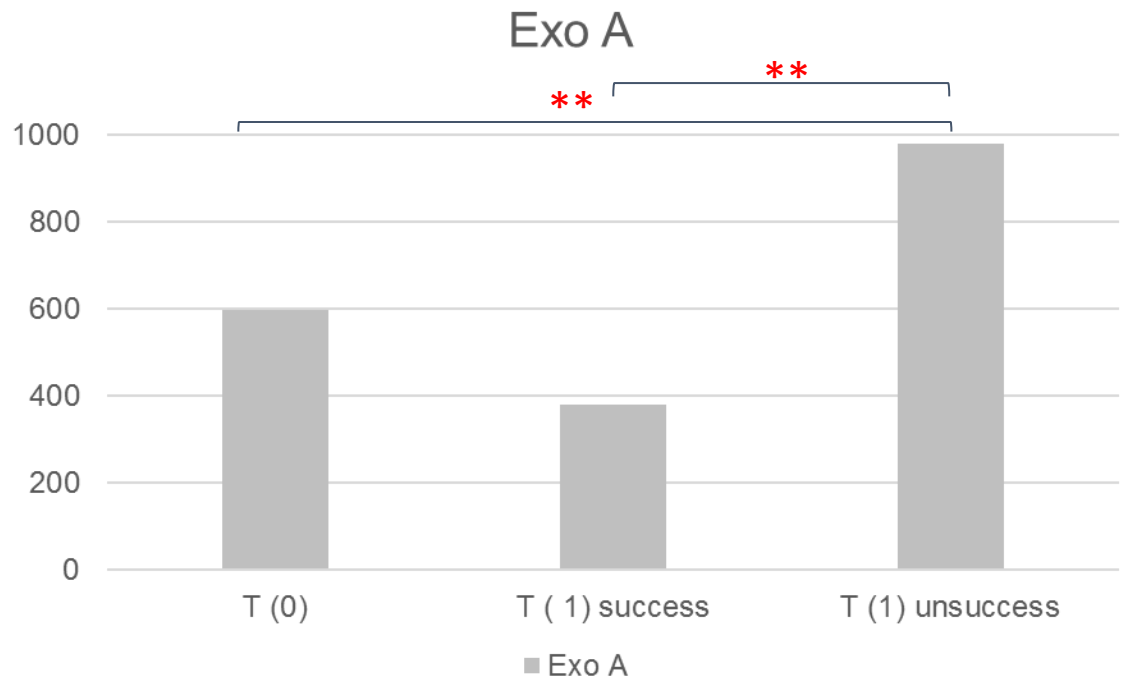
Results

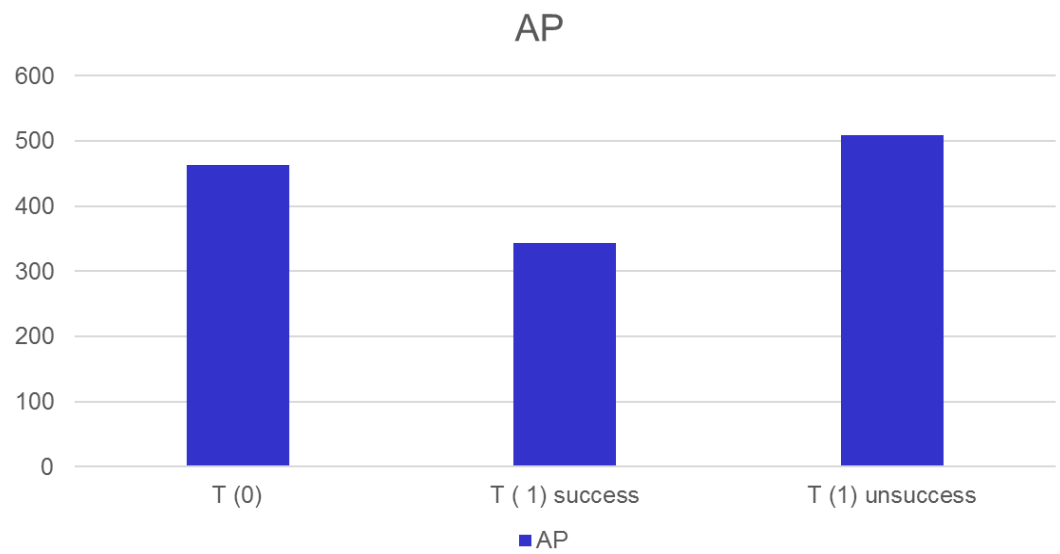
- At T (0) we analyzed 76 sera
- The antibody titer was under the cut-off level for three out of four the antigens used
- At T (1) we analyzed 58 sera (36 after successful treatment + 22 after unsuccessful treatment)

	Sera (n)	IgG St-AG	AP	Ela	ExoA
T(0)§	**76**	1.79 ± 1.54	463 ± 702	441 ± 775	599 ± 786
T(1) after successful eradication§*	**36**	1.13 ± 0.96	343 ± 372	220 ± 331	380 ± 546
T(1) after unsuccessful eradication§*	**22**	1.97 ±1.64	508 ± 573	771 ± 944	980 ± 1162
P value**		P= 0.008	P > 0.05	P= 0.001	P= 0.005

Tab. 1: Antibody titer at T(0) and at T(1) after eradication therapy using four different antigen. § Groups analyzed with the ANOVA * Groups analyzed with the t-test. **The result is significant at p < 0.05







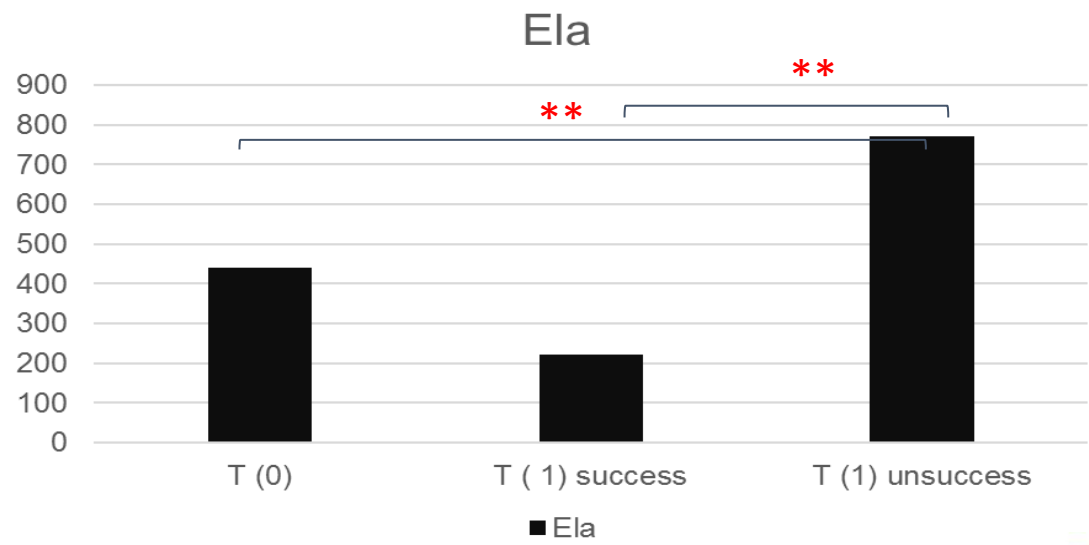


Fig. 1: Tab. 1: Antibody titer at T(0) and at T(1) after eradication therapy using four different antigen.

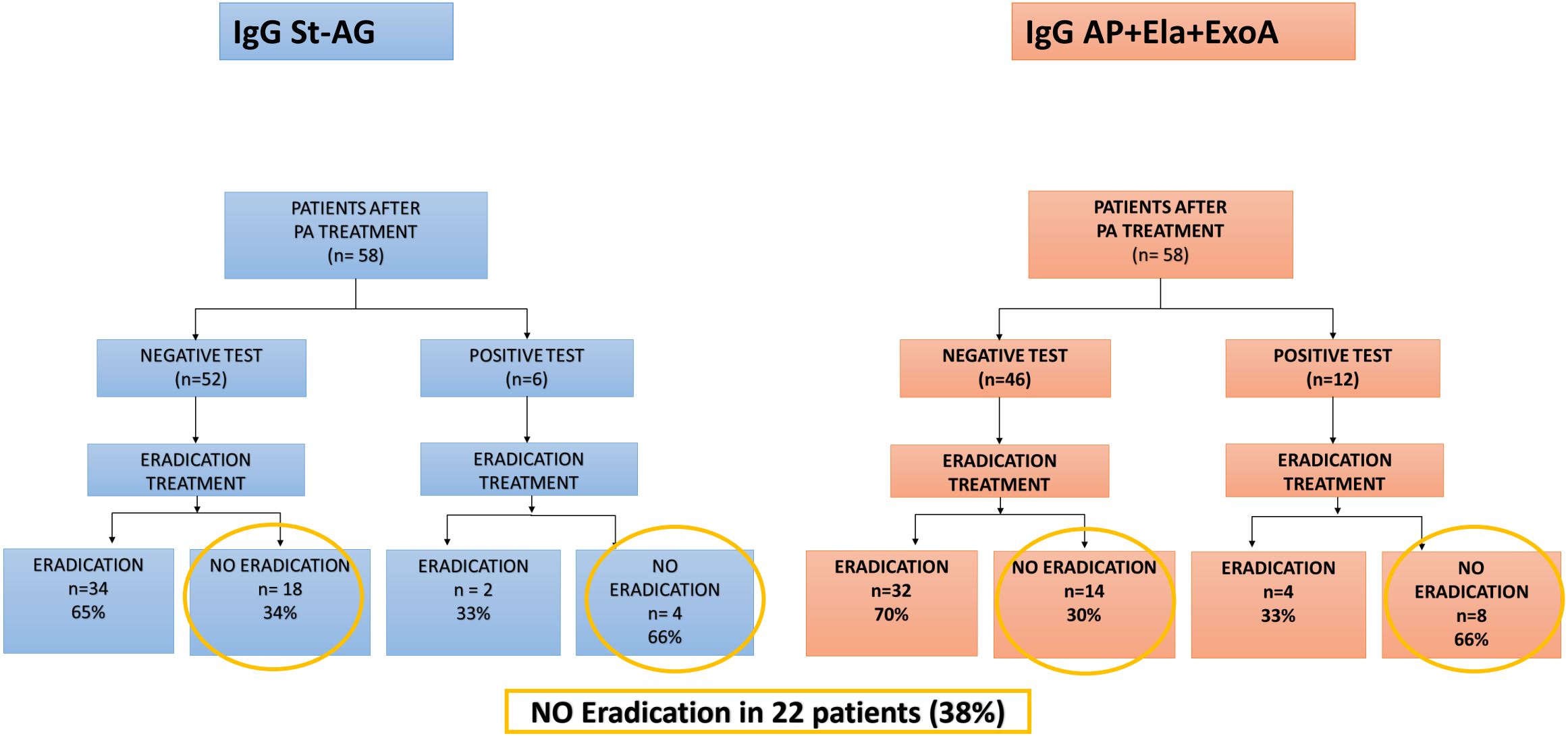


Fig. 2: The distribution of PA eradication treatment efficacy in patients with positive and negative anti-PA IgG test.

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Conclusions

- Significant decrease in antibody titers against IgG St-AG, Ela and ExoA in patients clearing *P. aeruginosa* infection
- Titers increased in patients in whom antibiotic therapy failed to eradicate the organism.
- Serum antibody may be useful to monitor early Pa infection and to monitor early eradication treatment.
- Pa clones analysis with NGS in progress

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