

Thymectomy in Myasthenia Gravis: a single center experience on 432 patients

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INTRODUCTION

Thymectomy in Myasthenia Gravis (MG) is a widely recommended treatment in patients with anti-acetylcholine receptor antibodies to improve myasthenic symptoms or to achieve the complete remission of the disease.

Aim of our study is to analyze retrospectively the neurological outcomes of MG patients undergoing thymectomy with a follow up of 3 years or more.

MATERIALS AND METHODS

432 myasthenic patients (155 M, 277 F; mean age: 40 years \pm 16) underwent thymectomy in the Division of Thoracic Surgery of Hospital of Pisa between 1988 and 2012. Patients were evaluated according to both Osserman (45 class I, 133 IIA, 241 IIB, 10 III and 4 IV) and MGFA classifications (45 I, 148 IIA, 190 IIB, 3 IIIA, 21 IIIB, 14 IVB e 12 V). 375 patients were AChRAb positive, 10 anti-MuSK and 47 patients were seronegative for both antibodies (SNMG). 425 patients underwent transternal extended thymectomy while 7 patients minimally invasive robotic surgery. Hystologically, 264 subjects had thymic hyperplasia, 11 involved thymus, 157 patients thymoma (WHO histological grading: 28 A, 37 AB, 41 B1, 25 B2, 24 B3, 2 C; Masaoka-Koga staging: 17 I, 48 IIA, 65 IIB, 14 III, 7 IVA, 4 IVB). Almost all patients were treated with steroids before thymectomy, during the perioperative period and after surgery for a mean time of 2 years. Outcome was defined according to MGFA recommendations on MG postintervention status.

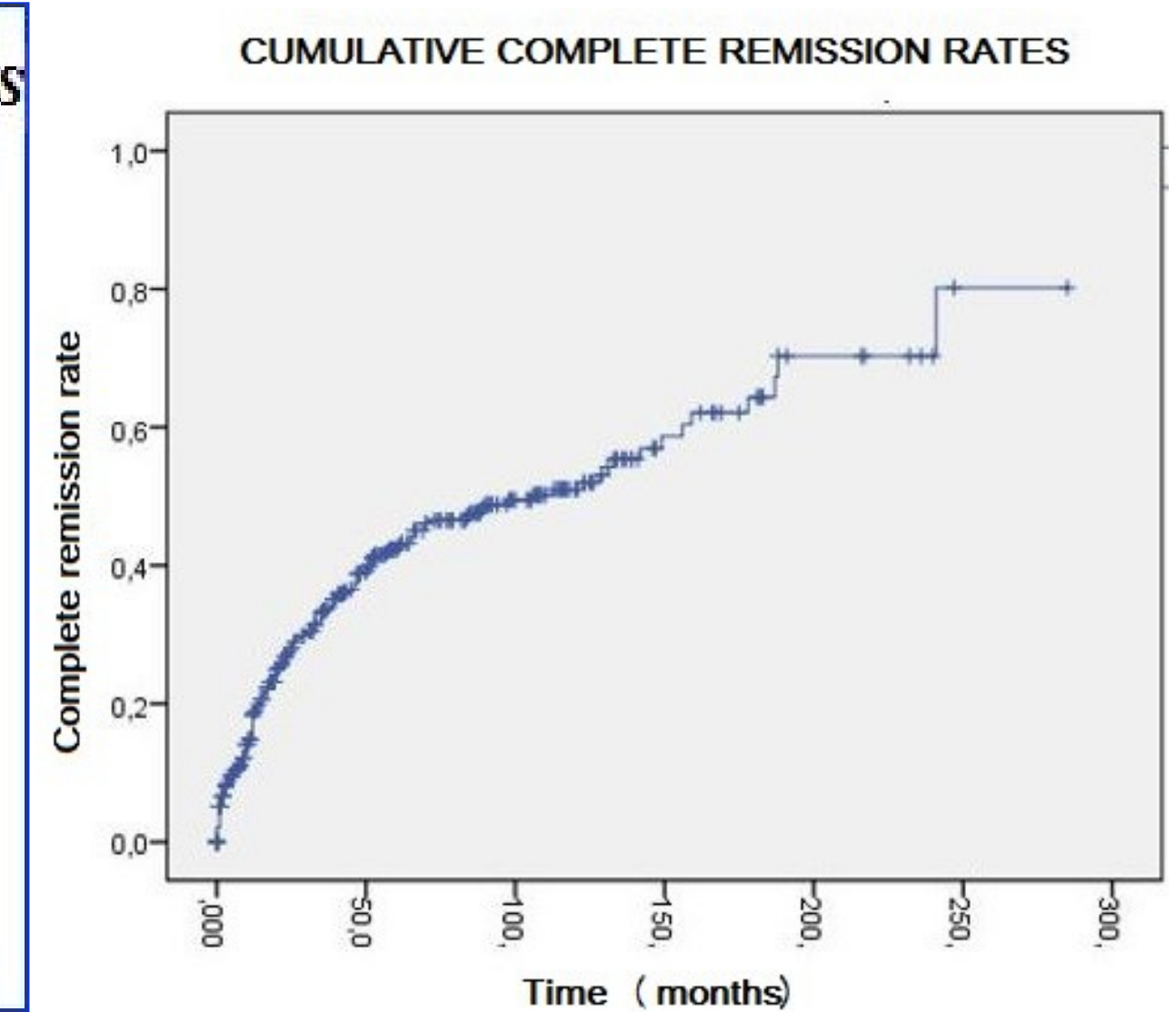
Life table analysis by the Kaplan-Meier method was used to assess the effect of the evaluated variables on the distribution of complete remission and to evaluate differences among patient subgroups.

RESULTS

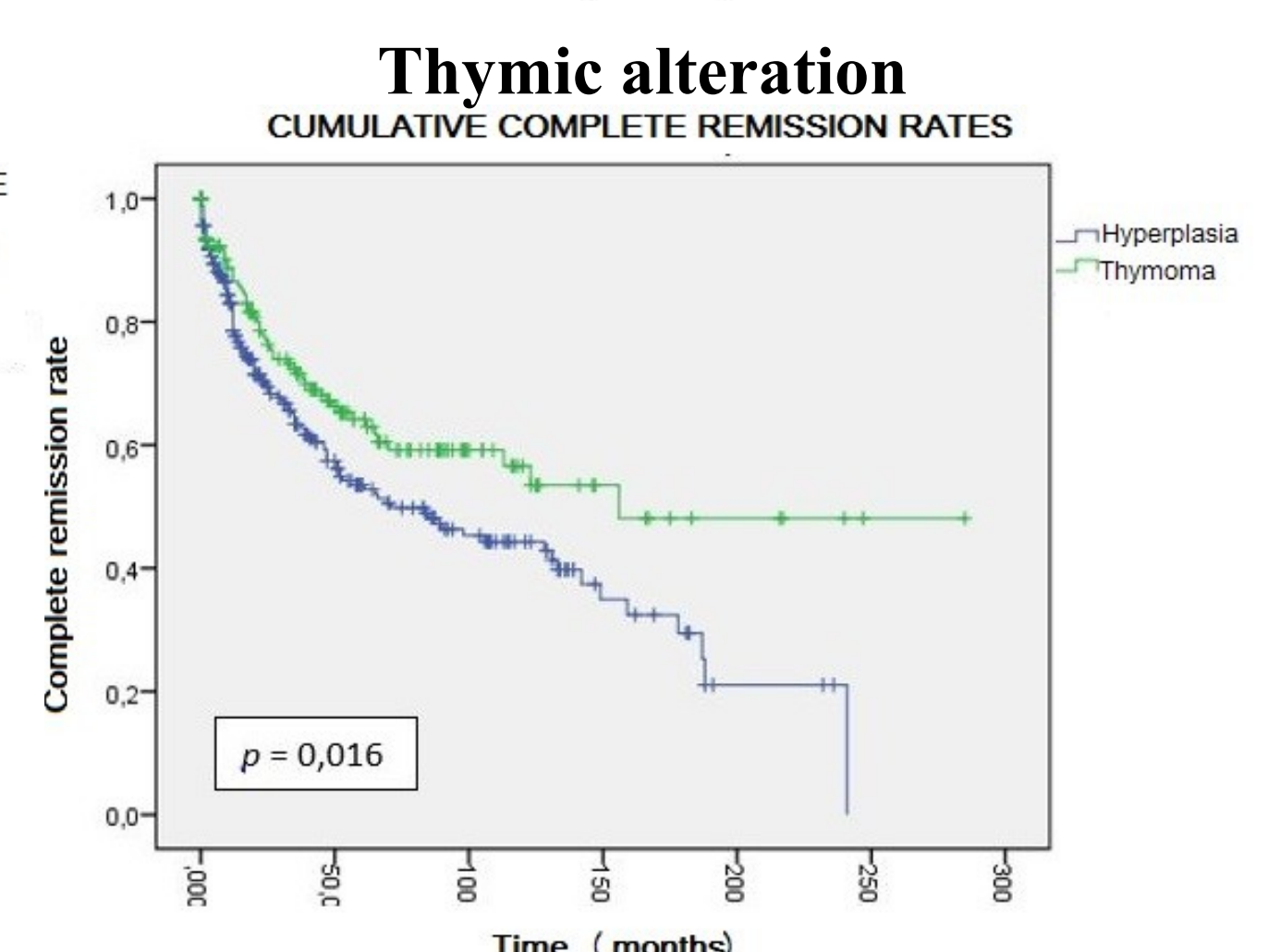
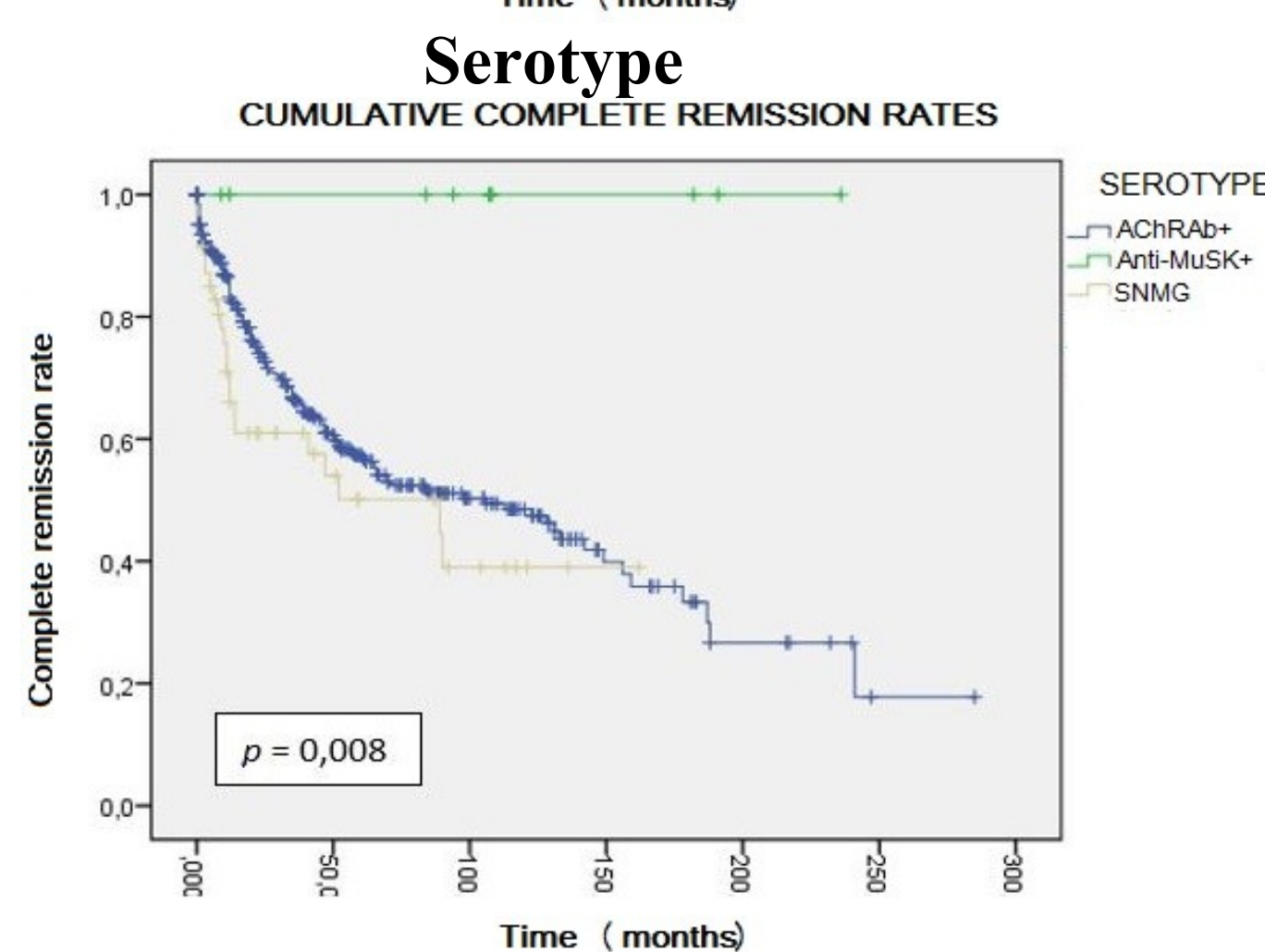
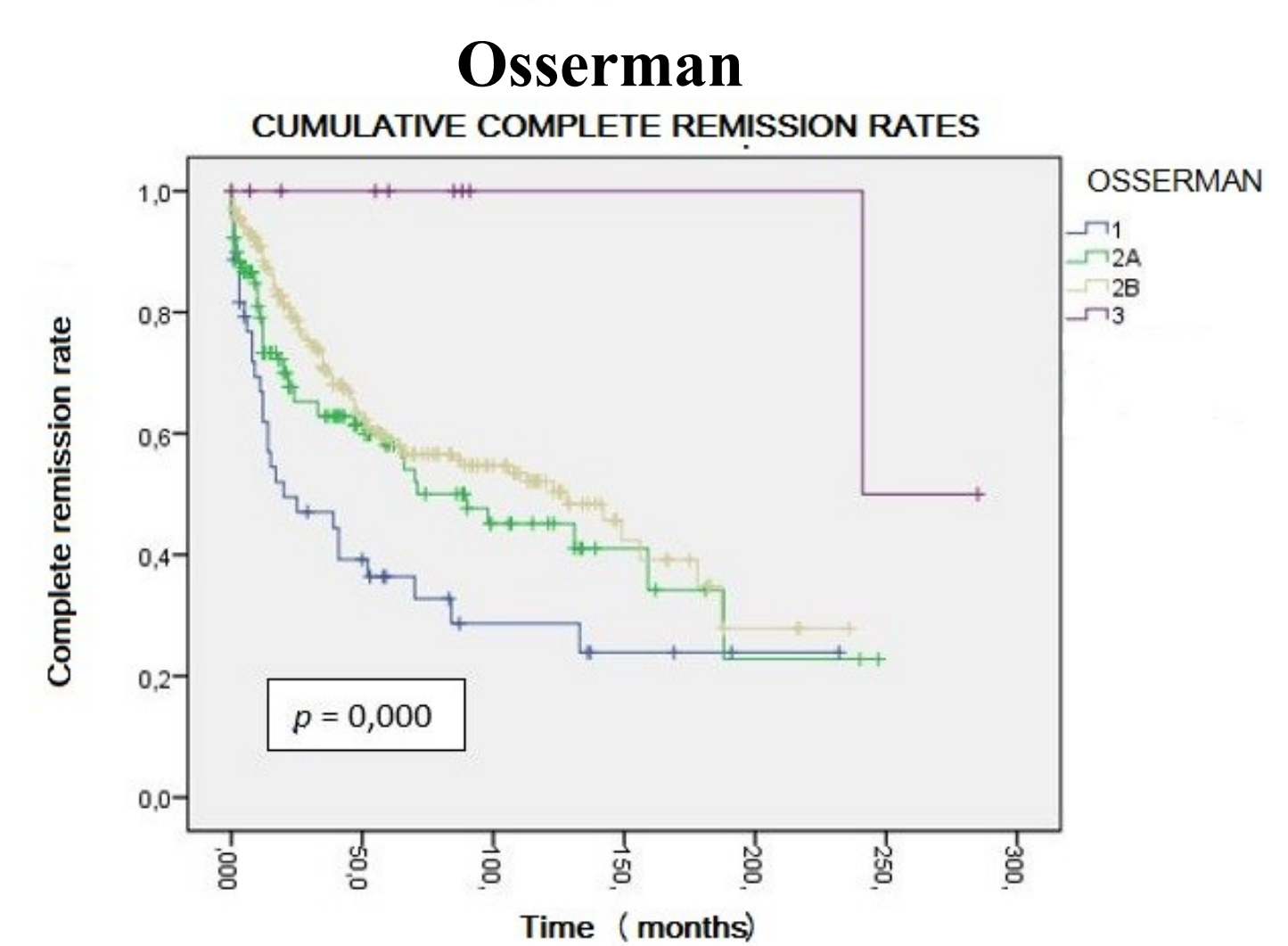
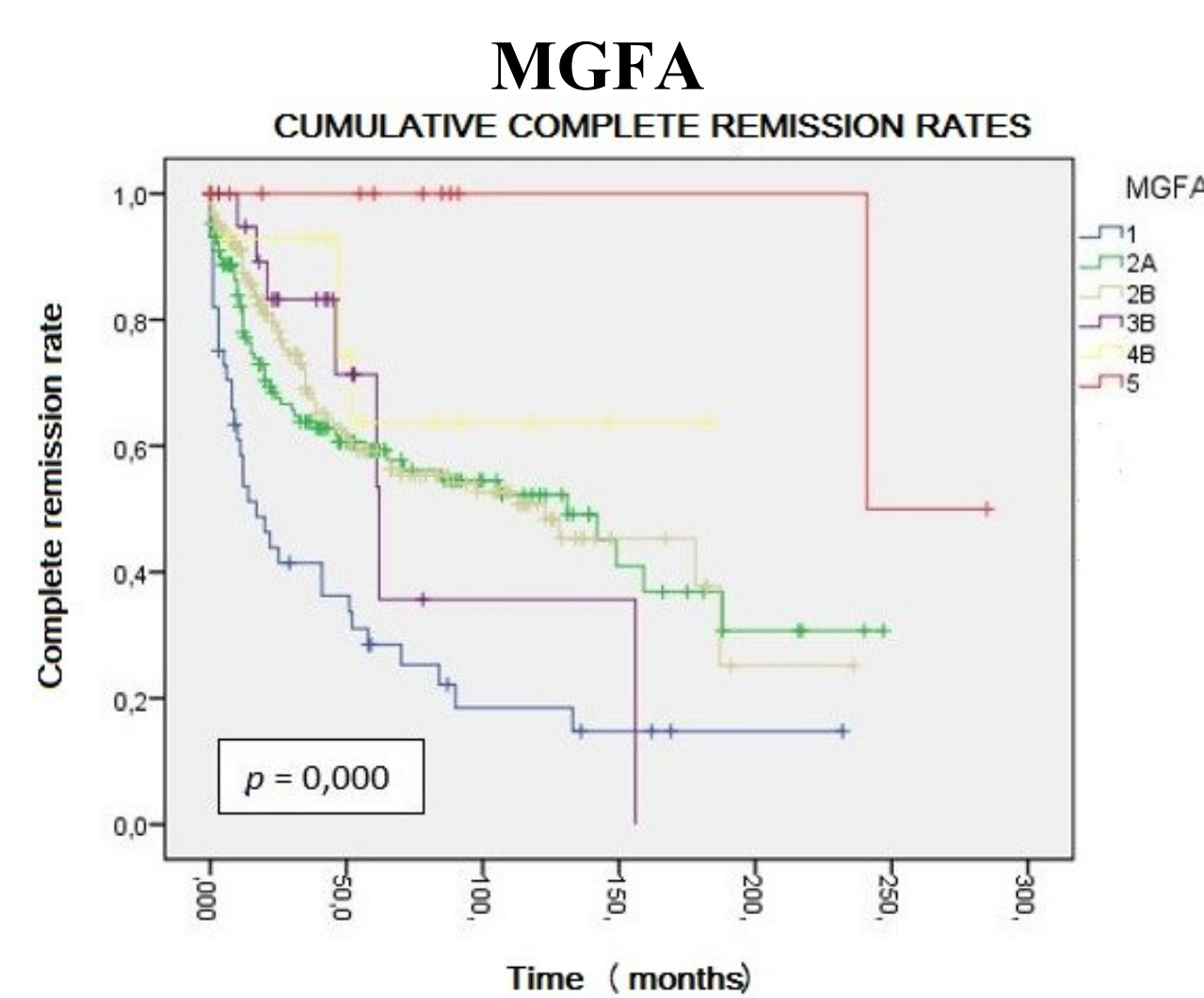
The postintervention status at the end of follow up (mean time 50 months; range: 36-285) is reported in table 1. Rates of CSR at 3 and 5 years were respectively 33,5% and 42,3% (fig 1). The variables that most influence the neurological outcome have been: surgery technique, MGFA and Osserman classifications, the serotype, the thymic abnormality and WHO histologic grading of thymoma (figures 2-5; table 2). Best results in terms of CSR appeared in patients operated by robot surgery, in those with mild symptoms before surgery, with AchRAb+ or SNMG, with hyperplasia and, in case of thymoma, with low histological grade.

CLINICAL RESULTS	N° OF PATIENTS
Complete remission	175
Pharmacological remission	106
Minimal signs	75
Improved	49
Unvariate	20
Worsened	6

82,4%



Multivariate analysis (Cox's regression model)



Variables	OR	95% CI	P
Sex	0.897	0.638-1.261	0.532
Age of onset	0.871	0.595-1.273	0.475
Osserman	0.741	0.434-1.265	0.272
MGFA	0.642	0.450-0.916	0.015
Serotype	0.990	0.619-1.582	0.966
Surgical technique	0.399	0.141-1.128	0.083
Thymic hystology	0.808	0.544-1.202	0.294
Masaoka	1.014	0.746-1.376	0.932
WHO	0.512	0.290-0.906	0.021

DISCUSSION AND CONCLUSIONS

In our study, radical thymectomy has got an established efficacy in MG treatment; however, neurological outcomes are different according to autoantibodies, pre-surgery severity according to MGFA and Osserman and thymic histology both considering hyperplasia as compared with thymoma and WHO staging. Our great results are probability related to the employ of a personalized medical therapy, based on steroid treatment in almost all patients, and to a strict collaboration between neurologist, thoracic surgeons and anesthesiologists during the entire peri-operative period and in the long term follow up. The neurological treatment along with surgery are critical elements to achieve these positive results.

References:

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