

## The effect of gender on the use of medicines in Multiple Sclerosis Patients

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### BACKGROUND

Multiple Sclerosis (MS) is a chronic inflammatory disease of the central nervous system that disables young adults. Epidemiological studies have shown that women are more likely to develop MS than men (ratio 2:1); however, the pathogenesis and treatment of MS in regards to gender has not been extensively studied.

### PURPOSE

To evaluate gender-related differences of relapsing-remitting MS patients in response to treatment with Natalizumab.

### MATERIAL AND METHOD

AIFA-NEURO records relative to patients treated with Natalizumab in the Neurology Division of L'Aquila were examined from May 2007 to September 2012. A total of 39 patients were recruited, of which 82% were females. The average age of patients starting the treatment was 33 for females and 36 for males. An Expanded Disability Status Scale (EDSS) score was assigned for each patient before Natalizumab treatment was started. The number of relapses in the 12 months before starting treatment with Natalizumab were calculated and recorded.

GENDER	Number of Patients Recruited	Average Age Starting Treatment	Number of dose Natalizumab/year	EDDS Score (average)	Number of Relapses (in 12 months)	Number of Patients in Treatment
FEMALES	32	33	10.5	2.8	1.8	27
MALES	7	36	10.5	2.8	1.4	7

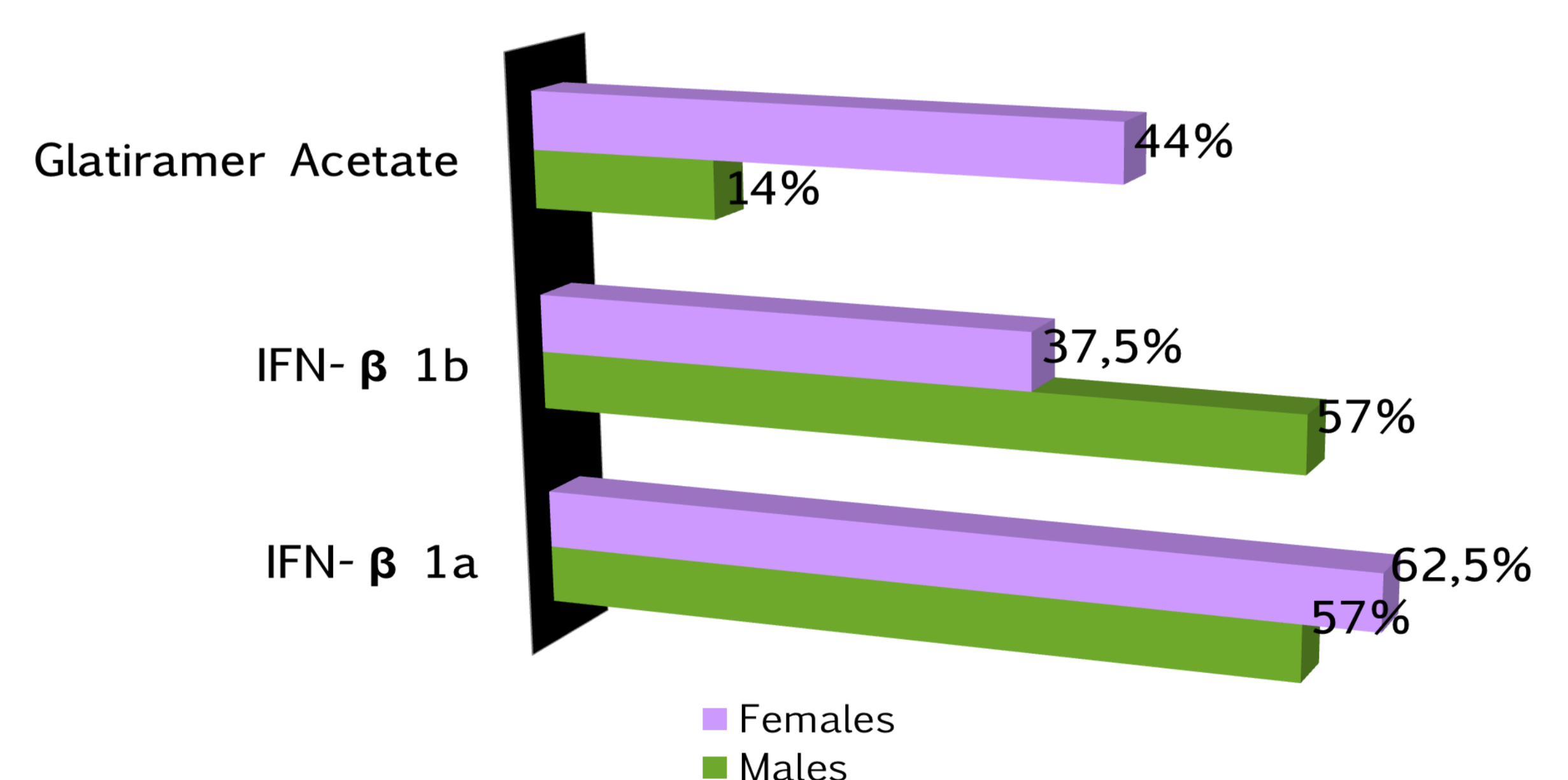
Table 1: Recruited patients in AIFA-NEURO (Neurology Division of L'Aquila) in the period May 2007- September 2012



<http://monitoraggio-farmaci.agenziafarmaco.it>

### RESULTS

EDSS scores were similar (average=2.8) in females and males. In contrast, females were more likely to have relapses compared to men (1.8 vs 1.4). Only 3 patients were treated with Natalizumab as the first-line drug; all other patients were first treated with a combination of 2 or 3 drugs. Females were more likely than males to have previously been treated with (IFN)- $\beta$  1a compared to (IFN)- $\beta$  1b (62.5% vs 37.5%), while men had previously been treated with both equally (57%). Additionally, females were more likely to have been treated previously with Glatiramer Acetate (44% vs 14%). All patients received an average of 10.5 administrations of Natalizumab per year. All patients are currently undergoing treatment except for 5 females who developed autoimmune reactions.



Graphic 1: Percentage of drugs used at first-line treatment

### CONCLUSION

The study describes gender-related differences in response to pharmacological treatments for MS. The results suggest that research should be conducted into the gender response to MS treatments.