



A Single-Center Review of Therapies Used Prior to Alemtuzumab in Patients With Multiple Sclerosis

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INTRODUCTION

Multiple sclerosis (MS) is a chronic inflammatory and neurodegenerative neurologic disease that is one of the leading causes of disability in young Americans.

There are currently no clinical predictors or diagnostic tests that allow providers to assess which disease modifying therapy (DMT) might be best suited for any individual patient, nor are there any widely accepted algorithms regarding DMT sequencing. Often, DMT are selected based on perceived disease course, patients' risk aversion, and provider discretion. Current hypotheses suggest that safety profiles of future therapies may be influenced by prior DMTs used.

Alemtuzumab is a highly efficacious MS therapy that was approved in late 2014. Treatment with this medication may result in secondary autoimmunity in a significant number of people.

Available data on patients who switch to alemtuzumab is limited and in the form of observational studies^{4,5}.

OBJECTIVES

The primary goal of our study was to evaluate prior DMT characteristics in patients who receive alemtuzumab for management of MS.

METHODS

All adult patients >18 years old who received alemtuzumab at Duke University Medical Center from January 1, 2015 to November 1, 2017 were retrospectively identified from the alemtuzumab REMS facility database.

Data collected from the electronic medical record included: age, sex, year of diagnosis, date of first infusion, prior DMTs, and date of last relapse.

RESULTS

Figure 1. Patient Demographics

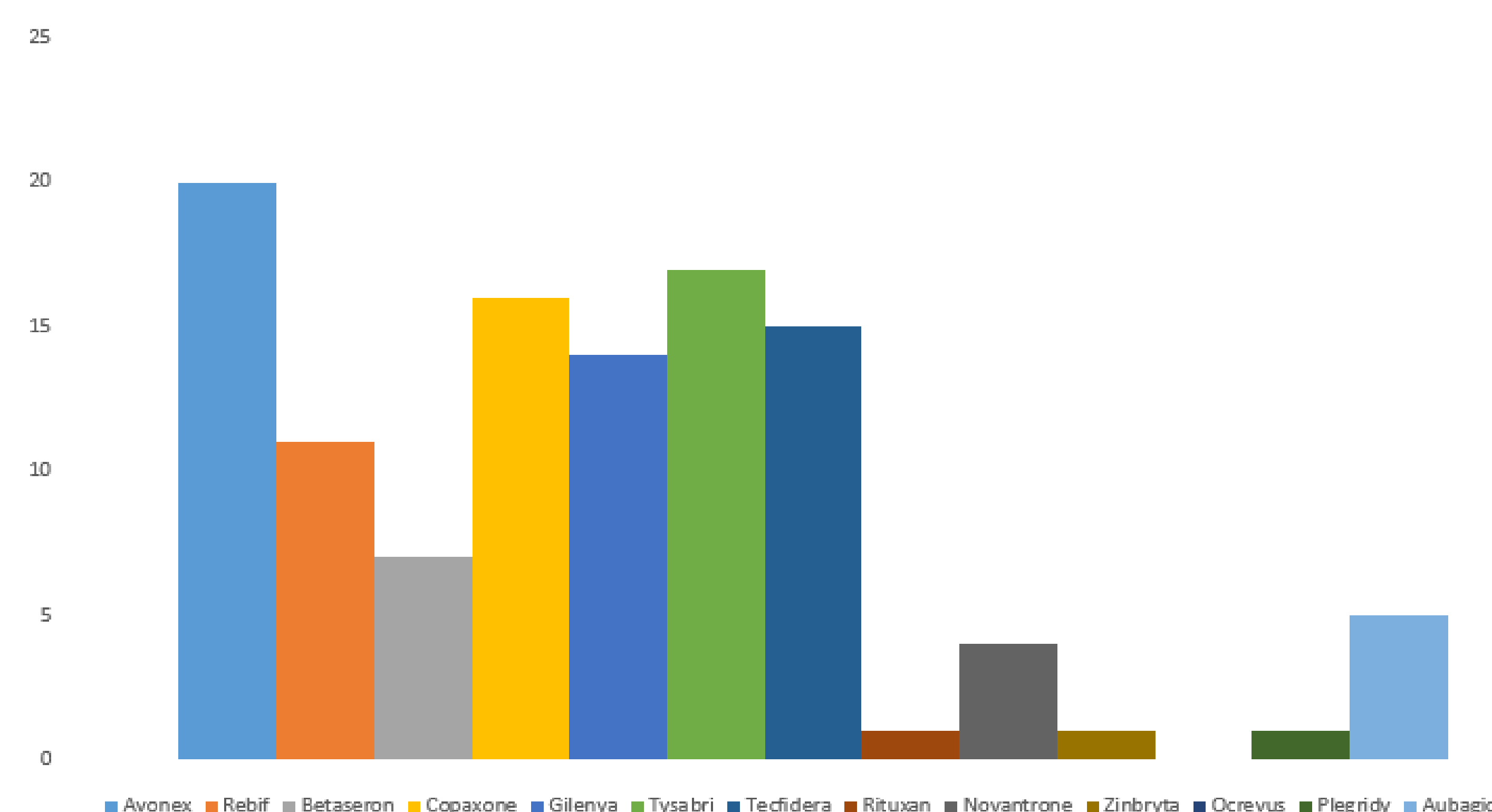
Patient demographics	Patients receiving alemtuzumab at Duke (N= 32)
Age range (years)	29-63
Average	43.5
Median	44
Female sex -- %	72
Number of previous DMTs	
Average	3.63
Median	3
Time from diagnosis to alemtuzumab (years)	
Average	12
Median	9.5
Time since last relapse (months)*	
Average	6.4

Time is calculated in months between last documented relapse and initial date of alemtuzumab infusion. Five patients were treated with alemtuzumab in the setting of clinical progression without new neuroimaging changes, therefore data was only available for 27 of the 32 patients.

Patients received an average of 3.6 DMTs prior to alemtuzumab treatment.

Interferon-a, natalizumab, dimethyl fumarate, glatiramer acetate and fingolimod were the most frequently prescribed DMTs prior to treatment with alemtuzumab.

Figure 2. Prior DMTs, by frequency



DISCUSSION

In the recently published AAN guidelines, DMT switch consideration is recommended for patients who experience 1 or more relapses, 2 or more unequivocally new MRI-detected lesions, or increased disability on examination, over a 1-year period of using a DMT⁶.

Of our 32 patients, 21 patients had previously been on high-efficacy DMTs including fingolimod (N = 14) and natalizumab (N = 16).

We hope to prospectively study our patient population to assess responses to alemtuzumab as well as which prior therapies may have a signal for influencing response to therapy.

CONCLUSION

Patients within our center have typically received 3-4 DMTs prior to alemtuzumab treatment.

Within our cohort, treatment decisions were most often based on therapeutic failure of previous therapies as opposed to DMT intolerance.

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