

Alpha-1-Antagonists as Effective Treatment for Urinary Symptoms in Patients with Multiple Sclerosis

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BACKGROUND

- 90% of MS patients have LUTS, impacting both management and quality of life.
- The 2005 North American Research Committee on Multiple Sclerosis (NARCOMS) found approximately 65% of MS patients out of the 10,000 assessed, reported urinary symptoms, which seem to increase with the progression of the disease.
- One treatment option for management of LUTS in MS patients includes α -1 antagonists, which are approved for non-neurogenic LUTS in males.
- There is very limited data on usage of α 1-antagonists as plausible therapy agents for treating urinary symptoms in MS patients. A recent systematic review found only 3 randomized controlled trials on α blockers in LUTS treatment in MS patients.
- Aim: To evaluate the use of α -1 antagonist in patients with urinary bladder symptoms secondary to MS using post-void residual volumes and quality of life assessment scores (AUA and M-ISI) pre and post treatment**

STUDY METHODS

- Design:** Retrospective review of patients with MS with known documented urinary obstructive and retention symptoms
- Years examined:** 2006 - 2013
- Inclusion Criteria:** Patients with diagnosed and documented MS who were prescribed alpha antagonists to control urinary symptoms by a neurologist or urologist
 - Study group: Patients using alpha antagonists for treatment of urinary symptoms
- Exclusion Criteria:** Patients with other neurological diseases; patients who underwent surgical interventions in relation to their neurologic urinary symptoms
- Primary Outcome:** Post-void residual before and within the three years of drug treatment
- Secondary Outcome:** AUA-SS and M-ISI Quality of Life assessment scores
- Variables:** age, gender, race, body mass index (BMI), stage of disease, location of MS lesion, pre and post treatment post void residuals, and pre and post treatment AUA-SS and M-ISI scores
- Statistics:** Data was analyzed using the Chi square test for binary/categorical variables and ANOVA for continuous variables

RESULTS

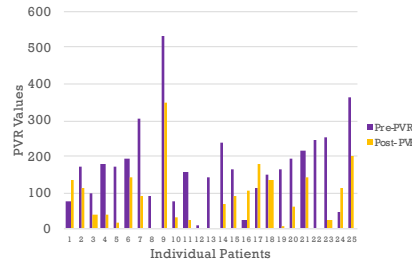


Figure 1: Pre and Post-PVR of Alpha Blocker Administration

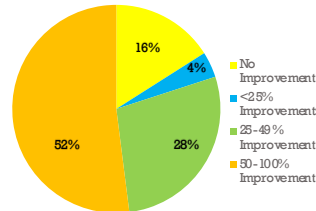


Figure 3: Pre and Post Alpha Blocker Treatment Improvement

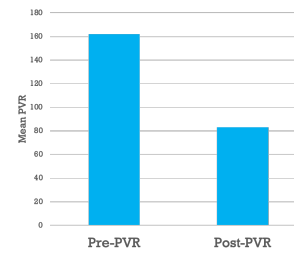


Figure 2: Alpha 1-antagonist Administration Pre and Post PVR

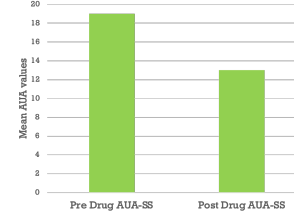


Figure 4: Pre and Post Drug AUA-SS Score

Table 1: Demographics

Gender, Male, n (%)	9(36%)
Age, years Median (range)	56.0(25-67)
Race, n (%)	
Caucasians	19(76%)
African Americans	5(20%)
Unknown	1(4%)
BMI, Mean (SD)	28.34 (6.8)
MS Duration, Mean (SD)	12.5 (12.5)
Treatment Time, Mean (SD)	13.5 (11.7)
Stage of Disease	
Primary Progressive	4(16%)
Secondary Progressive	8(32%)
Relapsing Remitting	11(44%)
Unknown	2(8%)
Types of alpha-1 antagonists	
Tamsulosin	19(76%)
Terazosin	3(12%)
Terazosin + Tamsulosin	2(8%)
Alfuzosin	1(4%)

- Mean change in pre and post treatment PVR values was 78.8ml (38.71-11.38, $p < 0.001$), indicating that using α -1 antagonists for treating patients with urinary symptoms secondary to multiple sclerosis is significant (Figure 2).
- Total AUA-SS changed from mean 19 to mean 13 ($p = 0.007$) after treatment (Figure 4).
- Sub-group analyses measuring age, gender, BMI, location of the MS lesions, duration and stage of the disease were statistically non-significant
- Fifty four percent of patients had a $> 50\%$ reduction in PVR and 32% had a 25-50% improvement after treatment (Figure 3)

LIMITATIONS

- Small sample size - subgroup analysis in our primary outcome and pair-wise comparisons in secondary measures could not be completed
- Confounding variable: Twelve patients were also on anti-cholinergics or β -3 adrenergic receptor, both of which are known to have impact on LUTS.

CONCLUSIONS

- Overall, we found a decrease in post-void residual volume of 78.8ml ($p < 0.001$) and in patient AUA-SS quality assessment scores ($p = 0.007$). These findings suggest that alpha-1 antagonists may be a viable treatment option to reduce PVR and improve quality of life for multiple sclerosis patients with urinary bladder symptoms.
- Our study shows alpha blockers may relieve urinary bladder symptoms in MS patients. Additional research is needed to support this data.