# Efficacy of Fingolimod in Ethnic Minorities with Relapsing-Remitting Multiple Sclerosis

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## INTRODUCTION

Multiple Sclerosis is an autoimmune, demyelinating and degenerative disease of the central nervous system. It primarily affects Caucasians, but is also observed in African Americans, Afro-Caribbeans, Asians, and Hispanics. There is a growing body of literature describing the clinical similarities and differences among different ethnicities in MS. [1-2] However, there is very little literature to date regarding the efficacy of the currently available disease modifying therapies in minority populations. In most phase III studies that report race, only 6% of subjects, at most, are non-white.[3-4] There is some literature to suggest that African Americans may respond differently to interferon therapy.[5] There has been one retrospective chart review evaluating the efficacy of the injectable therapies in patients with multiple sclerosis in Argentina. [6] There is no literature published to date regarding the efficacy of the first oral agent for MS, fingolimod, in ethnic minorities.

## METHODS

Retrospective chart review of ethnic minorities started on fingolimod in our clinic. The charts of all patients started on fingolimod from September 2010 to August 2012 were reviewed. Those patients identified as African American, Hispanic, Arabic/Middle Eastern, or Asian were included in our analysis. Charts were reviewed for number of relapses in the 2 years prior to starting on fingolimod therapy, number of relapses after starting on fingolimod therapy, MRI changes on fingolimod therapy, and prior disease-modify therapy (DMT).

## RESULTS

All patients that had been started on fingolimod from September 2010 to August 2012 were identified and charts reviewed (176 patients). A total of 22 patients (12.5%) were identified as African American, Hispanic, Arabic/Middle Eastern, or Asian. Of these 13 are African American, 6 Hispanic and 3 Arabic/Middle Eastern. Average age is 39.6 years; 4 subjects are males and 18 females.

The annualized relapse rate in the 2 years prior to starting fingolimod was 0.55. After starting fingolimod ARR decreased by 84% to 0.09 (p-value $<0.0001$). Average duration of fingolimod treatment was 17.8 months (SD $\pm$ 5.8 months, range 8-29 months); only two patients have been on therapy less than one year. A total of 3 patients had a relapse while on fingolimod. One patient had a relapse within one month of starting fingolimod, but has been stable since (28 months later). Another patient had a mild relapse with primarily sensory loss in her legs, so has continued on fingolimod. The third patient stopped fingolimod therapy due to clinical relapse and MRI progression. 5 patients had a single new or enlarging T2 lesion on MRI (1 year after starting on therapy).

One patient stopped fingolimod because she presented with pneumonia and elevated cardiac enzymes to an outside hospital while on therapy. She had no other identifiable risk factors for cardiovascular disease.

## CONCLUSION

Fingolimod appears to be an effective therapy for reduction of relapses in ethnic minorities.

## REFERENCES

[1]Cree, B.A, Khan, O, Bourdette, D, et.al. Clinical characteristics of African Americans vs Caucasian Americans with multiple sclerosis. Neurology 2004; 63: 2039-45.

[2]Amezcua, L, Lund, BT, Weiner, LP, and Islam, T. Multiple sclerosis in Hispanics: A study of clinical disease expression. Mult Scler 2011; 17: 1010-16.

[3]Johnson, K, Brooks, B, Cohen, J , et.al. Copolymer 1 reduces relapse rate and improves disability in relapsing-remitting multiple sclerosis: Results of a phase III multicenter, double-blind, placebo-controlled trial. Neurology 1995; 45: 1268-1276.

[4]Cohen, J, Barkhof, F, Comi, G, et.al. Oral fingolimod or intramuscular interferon for relapsing multiple sclerosis. N Engl J Med 2010; 362; 402-15.

[5]Cree, BA, Al-Sabbagh, A, Bennett, R, Goodin, D. Response to interferon beta-1a treatment in African American multiple sclerosis patients. Arch Neurol 2005; 62: 1681-83.

[6]Carra, A, Onaha, P, Sinay, V, et.al. A retrospective, observational study comparing the four available immunomodulatory treatments for relapsing–remitting multiple sclerosis. Eur J Neurol 2003; 10: 671–676.