"DETERMINATION OF MUTATION OF PROTEIN VP1 OF JC VIRUS IN PATIENTS WITH MULTIPLE SCLEROSIS"

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INTRODUCTION

Multiple Sclerosis (MS) is the first cause of non-traumatic neurological disability in young patients. Actually there are many treatments approved with high levels of efficacy but some adverse events; this is why recently it has been described that the first cause of PML in the world is MS, due to the mechanisms of action of this drugs. John Cunningham Virus (JCV) is a very common polyomavirus which has not been genotyped in our country, which means that we can't even know if the risk for PML associated with MS treatments is the same in all populations which can explain the different statistics about this all around the world.

So that, it is highly relevant to create new algorithms which include the risk to develop this potentially fatal oligodendropathy, while the underlying disease is not.

OBJECTIVES

1. To identify the relationship between the presence of mutation for VP1 JCV protein and the JCV index reported.

2. To identify the presence of VP1 JCV protein and the development of PML in MS patients.

METHODS:

Study population: Patients with defined clinical diagnosis of relapsing-remitting MS were selected. Clinical information was obtained and serum samples from cases and controls were collected. In the control group, patients with non-demyelinating neurological diseases were included.

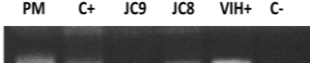
DNA extraction from peripheral blood mononuclear cells and CSF (Qiagen kit). A final point PCR was performed for the detection of JCV. The specific primers were designed using the les variable region of the virus.

	MS Patients (n= 30)	Controls (n=41)
Gender (M/F)	7/23	21/20
Age	36.2+-8	42.0+-9
MS evolution (months)	75+-58	
NTZ doses	24.4+-17.5	
JCV index	1.3+-1.1	

RESULTS

At this moment, we have included 71 samples: 30 with MS diagnosis and 41 controls. One of them was positive in the MS group and no one in the control one. The positive sample was amplified for VP1 protein and we identifyed tha mutation in the base number 186 which presents a substitution of a glycine for a cytosine.

No other samples were positive for JCV particle. We looked for the positive patient with no clinical o radiological PML manifestations.



CONCLUSION:

* The only positive patient for JCV VP1 mutation in CSF has not developed PML at this moment.

* It seems to be no correlation between JCV index and the presence of viral particles in serum of MS patients.

*Could the presence of JCV particles be a better risk marker for PML than the index?

DISCUSSION

At the moment, there has been designed an algorithm in order to stratify the PML risk for MS patients treated with Natalizumab, unfortunately, this can not be applied in other treatments, or with patients who have already abandoned such therapy. Therefore, the use of harder tools is required, and our proposal is the determination of JCV particles and VP1 protein mutation. In addition, it is important to note that it is not entirely clear if the PML risk is modified according to the subtype of virus in each geographical region.; so this work becomes even more relevant as it is part of our objectives.