Pregnancy, α-Fetoprotein and MS

R.O. Bailey, V.A. Nguyen, C.G. Sprague
Riverside Medical Clinic, Riverside, CA

OBJECTIVES

To describe quantitative determinations of AFP and estriol at fixed intervals prior to pregnancy, during gestation, and in the post-partum period, and compare these with RR, EDSS, and MRI correlates in a group of MS patients. To assess AFP as a possible factor promoting MS remission during pregnancy.

METHODS

Triple screen testing was performed on 5 pregnant MS patients followed serially at 3 month intervals by neurologic examination, EDSS classification, and MRI scanning. All patients had discontinued their disease specific agents (DSAs), (4 Glatiramer acetate and 1 IM β-interferon 1a), at least one month prior to conception. EDSS scores varied between individual patients from 3.5-6.5 prior to conception. All brain MRIs were performed on a 1.5T scanner using standard clinical protocol.

RESULTS

Variability was noted in all triple screen determinations with specific ranges in AFP from 7-150 ng/ml during pregnancy. All patients had a marked reduction in RR, and there was a sustained, dramatic improvement in EDSS scores that in some patients which persisted for months post-partum. MRI data revealed a reduction in T2 hyperintense lesions and disease burden as well as reduction in gadolinium enhanced lesions throughout pregnancy.

CONCLUSIONS

- There is no correlation between AFP level, degree of EDSS improvement, and RR reduction.
- Within a given patient, there may be an association between AFP level, improvement in EDSS, and RR reduction.
- There is no association between EDSS improvement, RR reduction, and estriol levels.
- There is a loose association of between AFP levels, EDSS improvement, RR reduction, and improvement on MRI (resolution of gadolinium enhanced lesions and burden of disease activity as reflected in T2 weighted imaging.)
- Results show a greater than previously reported value of 0.265 relapses per pregnancy year (1), and a sustained improvement in disease disability for greater than one year postpartum.

AFP may exert a neuroprotective effect in certain immune diseases and may provide immunoregulatory control in MS during pregnancy. AFP and current DSAs alter the innate immune system in complimentary ways. AFP has been implicated in suppression of cytotoxic T lymphocytes, and in this way may complement the noted Th1 to Th2 paradigm shift caused by Glatiramer acetate and some other DSAs. Further and larger studies appear warranted in this “experiment in nature”.

References


THE AUTHORS HAVE NOTHING TO DECLARE