

Cesarean delivery and artificial lactation are associated with an earlier age of disease onset in multiple sclerosis

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Background: Age at onset (AAO) in multiple sclerosis (MS) is an important marker of disease severity and may have prognostic significance. Understanding what factors can influence AAO may shed light on the aetiology of this complex disease, and have applications in the diagnostic process.

Methods: The study cohort consist of 2055 eligible patients followed up prospectively at San Raffaele Hospital. AAO was defined as the year of the first symptom suggestive of inflammatory central nervous system demyelination. Predictors of AAO were evaluated by linear regression.

Results In our cohort of patients, the mean age at onset of MS was 28.4 years (SD 8.4 years), and the female:male ratio was 2.2:1. A significant percentage of patients (225 patients, 10.9%) were born from a cesarean delivery, and most of them (1230 patients, 59.9%) received maternal breastfeeding, while the remaining received artificial lactation. Compared with those born from a natural delivery, onset of symptoms was 5.2 years earlier for those with cesarean delivery ($p < 0.001$). Also, artificial lactation was associated with an earlier diagnosis (-2.2 years earlier) compared to patients who had been breastfed, in which the duration of the breastfeeding period was directly associated with the age of onset of MS.

Conclusions An earlier AAO in MS patients born from a cesarean delivery and receiving artificial lactation was observed, and the results suggest that environmental factors which act at the population level may significantly influence disease severity characteristics in genetically susceptible populations.