F2α-isoprostane is accepted as an oxidative stress indicator and melatonin shows neuroprotective effects by antioxidative and anti-amyloidogenic influences. By measuring these in patients diagnosed with minimal cognitive impairment (MCI) and Alzheimer-type dementia, we intended to demonstrate whether the measurement of these markers contributes to early diagnosis of Alzheimer disease (AD) in the MCI stage or not.

Materials and methods: Three groups (n = 63) were created: the AD group, MCI group, and control group. Serum melatonin levels were measured by radioimmunoassay method, and plasma total 8-isoPGF2α levels were measured by enzyme immunoassay method.

Results: Significant differences were observed in the melatonin levels between the MCI group and AD group (P = 0.009), and in 8-isoPGF2α levels between the AD group and control group (P = 0.022). A negative correlation between mini-mental state examination (MMSE) scores and 8-isoPGF2α levels (r = –0.459, P < 0.001) and positive correlation between MMSE scores and melatonin levels (r = 0.317, P = 0.011) were found.

Conclusion: Although the plasma 8-isoPGF2α and serum melatonin levels in MCI were not found to be good early diagnostic markers to indicate risk of AD, results were found to support the role of oxidative stress in AD.

Key words: Alzheimer disease, minimal cognitive impairment, oxidative stress, isoprostane, melatonin