ABSTRACT

**Background:** Melatonin is one of the important immunomodulatory molecules in allergic diseases. Melatonin also plays a role in several body systems including to regulate circadian rhythms because of its role to cause drowsiness. Research shows in the case of atopic dermatitis (AD) circadian production of melatonin reduced compare with healthy controls.

**Purpose:** To investigate the differences of urinary melatonin levels between children with AD and healthy controls, and its relationship with disease severity.

**Method:** A cross sectional study was conducted in pediatric dermatology division of our outpatient clinic. Severity of AD was determined by using the instruments Scoring Atopic Dermatitis (SCORAD). Urinary melatonin levels were measured by Enzyme-linked immunosorbent assay (ELISA).

**Results:** The urinary melatonin levels in AD group were not significantly lower than in healthy controls (P =0.98 P<0.05) but the means show lower levels of urinary melatonin levels in AD group (486.73 ± 292.13 pg/ml, 611.51 ± 280.45 pg/ml, respectively). There was no significant association between urinary melatonin levels and disease severity (P > 0.05) but the tendency of decreased urinary melatonin levels in accordance with increasing the severity of AD.

**Conclusions:** The urinary melatonin levels in AD group were not significantly lower than in healthy controls. There was no significant association between urinary melatonin levels and disease severity but the tendency of decreased urinary melatonin levels in accordance with increasing the severity of AD.

**Keywords:** atopic dermatitis, children, melatonin urine