

POSTER PRESENTATION

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Innate antiviral immunity is impaired in young patients with hand foot and mouth diseases

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Introduction / objectives

This study was designed to explore the expressions of three pattern-recognition receptors (Toll-like receptor 3, retinoic acid inducible gene-I and melanoma differentiation-associated gene 5) and components of their signaling pathways in the peripheral blood mononuclear cells of children patient with Hand, foot and mouth disease.

Methods

98 HFMD patients (aged of 1-5 years) and 55 age-matched non-infection children were enrolled in this study; the patients were divided into two groups according to clinical characteristics - with or without complications. The expressions of TLR3, RIG-I, MDA5, IRF-1 and IFN-alpha mRNA were detected by Real-Time PCR.

Results

The expression levels of TLR3 mRNA in HFMD patients were significantly reduced (6.05 ± 1.26) compared with the non-infection children (7.05 ± 0.96), $P < 0.001$, and the furthermore decreased was found in the patients with complications (5.79 ± 1.15). While, the expressions of MDA5 mRNA in all patients including without complications (4.64 ± 0.49) and with complications (4.60 ± 0.48) were markedly higher than the non-infection children (4.16 ± 0.35), $P < 0.001$. However, RIG-I mRNA was detected only in 72/98 patients, which was not found in the non-infection children. IFN-alpha was lower in the patients without complications (5.71 ± 1.26) than the non-infection children (6.19 ± 0.86), and significantly decreased IFN-alpha mRNA transcriptions were found in the patients with complications (5.54 ± 1.18), compared with the non-infection children $P < 0.05$. Moreover, the changes of IRF-1 mRNA were similar with IFN-alpha, an evidently reduced level of IRF-1 was in

the patient with complications (4.89 ± 0.66) compared with the non-infection children (5.32 ± 0.64), $P = 0.001$.

Conclusion

It is suggested that innate antiviral immunity is impaired in patients and is possibly correlated with the severity of illness.

Disclosure of interest

None declared.

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