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The HMGB1 expression in macrophages induced by calcium oxalate crystal

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Objective: To study the high mobility group protein B1 (HMGB1) expression in macrophages induced by calcium oxalate monohydrate (COM) crystals.

Methods: The morphological changes of macrophages induced by calcium oxalate monohydrate (COM) crystals were observed by Phase contrast microscope. Macrophages were stimulated with 100 ug/ml COM for 0, 6,12,24 h and 36 h. The HMGB1 in total protein and cell plasma protein of macrophage was detected by Western Blot. The HMGB1 mRNA expression in macrophage was detected by RT-PCR. When macrophages were co-cultured with COM for 0, 1,2h and 4 h. The TNF- α and IL-6 in cell culture supernatant were detected by ELISA.

Results: For 0 to 6 h, the content of HMGB1 in cell plasma was low. The HMGB1 in cell plasma increased gradually, when macrophages were stimulated with COM for 12 to 36 h. For 0 to 6 h, the content of HMGB1 in macrophages total protein was not high. The content of HMGB1 in total protein of macrophages began to increase when were stimulated for 12h. For 24 to 36 h, HMGB1 expression stayed at a higher level. RT-PCR results showed that there were no obvious changes in HMGB1 mRNA expression of macrophages, when the cells were stimulated by COM for 0-12 h. HMGB1 mRNA expression in cultured cells increased significantly after 18 to 24 h. The TNF- α and IL-6 in cell culture supernatant of macrophages began to increase, when the cells were stimulated with COM for 2h, and reached the peak after 4h.

Conclusion: The expression of HMGB1 in macrophages can be induced by COM. The release time of HMGB1 in macrophages was later than TNF - α and IL-6.