Subpopulation of macrophages in prostatic fluid

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To evaluate leukocytosis in the prostatic fluid (PF), we have studied the macrophages in PF detecting them by nonspecific esterase staining.

Preliminary studies have shown a different pattern of staining in acute prostatitis compared with chronic prostatitis\(^1\). In the early stage of acute prostatitis, most of the leukocytes in a smear of PF took up the stain, while in chronic prostatitis only a few leukocytes took up the stain. However, longitudinal study of percentage of macrophages among leukocytes in prostatic fluid from nonbacterial prostatitis patients did not show correlation between percentage of macrophages and severity of clinical symptoms\(^2\).

The idea of macrophages subpopulation, resident and inflammatory macrophages in mouse system was presented by Cohn\(^3\). The inflammatory macrophages which are activated macrophages spread rapidly and occupy wider area than unstimulated resident macrophages when allowed to attach to glass.

Herein we examined macrophages subpopulation in PF from nonbacterial prostatitis patients by adherence and spreading on glass to investigate correlation between appearance of macrophages subpopulation and stages of inflammation in the prostate.

For the observation of adherence and spreading on glass, 5 μl to 20 μl of PF in 0.75 ml of MEM containing 10% FCS (MEM/10% FCS) were introduced into Lab-Tek 4 chamber (Lab-Tek Products) and incubated at 37°C in a CO\(_2\) incubator to allow macrophages to attach to glass.

After incubation for 60 min, the chamber was washed with MEM/10% FCS to discard the unadherent cells. Photographs of the same microscopic field were taken before and after the washing.

For the identification of macrophages, Lab-Tek slides were stained for non-specific esterase\(^4\).

After these procedures, results were divided into two groups.

Group 1. Most of the leukocytes remained round in shape after incubation for 60 min, and were removed by washing.

Group 2. After incubation and washing there were many adherent cells which were observed in various sizes and shapes (Fig. 1, 2), and most of these adherent cells were positive for non-specific esterase staining.

These differences of result between group 1 and 2 may be related with stages of inflammation. It is of interesting to find that macrophages were observed in various

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sizes and shapes after incubation, washing and non-specific esterase staining, although non-specific esterase staining of PF smears showed only round cells. We were unable to find any previous reports regarding the culture of macrophages in PF. We believe these techniques are useful to study macrophages subpopulation in PF and further study is currently undertaken to investigate correlation between the appearance of macrophages subpopulation and stages of inflammation in the prostate.

REFERENCES


(Received for publication, June 2, 1982)