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Turnover of Monocytoid Cells Within the Limiting Membrane of Rat Seminiferous Tubules

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The mode of renewal of mononuclear leukocytes found between the myoid cells forming the limiting membrane of rat seminiferous tubules was investigated by histometric methods. The average number of leukocytes per unit area of tubular wall varied significantly in relation to the cyclic events taking place in the seminiferous epithelium. Two peaks in their number were observed in tubular segments at stages IX-XII and XIV-I of the cycle. Degenerating monocytoid cells were also observed with high incidences at the same stages. Monocytoid cells, seen in division, presented high mitotic indices in stages V-VI and XIV of the cycle. Correspondingly, labeling indices of these leukocytes, obtained in radioautographed tubules of ³H-thymidine-injected rats, showed two peaks in tubular segments at stages II-IV and XIII of the cycle. Sensitive to X-irradiation, the population of monocytoid cells was restored within 24 days following treatment with X-rays (450 r). These various data, in view of the relatively few images of migration of leukocytes from the interstitial tissue into the limiting membrane, indicated that the monocytoid cells may form a self-renewing cell population.

Key words: testis, seminiferous tubules, limiting membrane, mononuclear leukocyte, cell renewal

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