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NEUTROPHIL CHEMOTAXIS AND CHEMILUMINESCENCE
IN PATIENTS WITH JUVENILE PERIODONTITIS

BY

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SUMMARY

Peripheral blood polymorphonuclear leukocytes (PB-PMNs) from 26 patients with juvenile periodontitis (JP), and from sex and age matched controls were challenged with activated serum and with opsonized zymosan for chemotactic and for chemiluminescent response respectively. The JP groups showed significant reduction of PMN chemotaxis in the presence of either autologously or homologously zymosan activate sera. The reduced chemotaxis was attributable to the nature of th PB-PMNs in JP patients and not to the capacity of the patient serum to generate chemoattractants. PB-PMNs in JP patients exhibited normal chemotactic dose-response to various concentrations of endotoxin activated pooled human sera (EAPHS) although the response was lower than that of matched controls, particularly at 5 and 10% of EAPHS. On the other hand, PB-PMNs of JP patients produced significantly higher chemiluminescence (CL) peak values than those of matched controls when they were challenged with autologously opsonized zymosan. Such an enhanced CL response was not attributable to the metabolic activity of the cells, but was most likely associated with the opsonizing capacity of the patient serum, as evident from an increased CL response of matched control PMNs challenged with zymosan pre-opsonized with the patient serum. Furthermore, the patient serum also showed significantly higher CL resposne than matched control when the PB-PMNs from only one healthy volunteer was used as responding cells. However, the degree of depression of PMN chemotaxis did not correlate with the degree of elevation of opsonic activity in JP patient.

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