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IMMUNOPATHOLOGIC STUDY OF THE CONJUNCTIVA IN PATIENTS WITH BONE MARROW TRANSPLANTATION: A PROSPECTIVE STUDY

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We investigated the immunopathologic characteristics of the conjunctiva of patients with bone marrow transplantation (BMT), and correlated this with disease activity by using a panel of monoclonal antibodies to CD3, CD4, CD8, CD14, CD19, and CD57 molecules on conjunctival biopsy specimens from patients who underwent bone marrow transplantation. The conjunctival samples were obtained from patients receiving both autologous BMT and allogeneic BMT. Five patients underwent conjunctival biopsy before BMT, 20 patients after BMT, and 8 patients before and after BMT. For all biopsies done after BMT, the samples were obtained beyond day 100.

RESULTS: Epithelium and stroma of conjunctiva from patients with allogeneic BMT showed significantly more T-cells (CD3+), T-helper cells (CD4+), T-suppressor/cytotoxic (CD8+) and macrophages (CD14+) following compared to before BMT. However, the number of CD14 cells in the stroma was significantly greater after than before autologous BMT. Initially, patients with allogeneic BMT and ocular signs of dry eye showed a significant over-expression of CD14+ cells in the epithelium.

CONCLUSIONS: These findings indicate that the conjunctivitis of chronic GVHD is complex, with T cells and macrophages dramatically contributing to the process. However, NK-cells (CD57+) do not participate in the process. Epithelium of the patients with signs of dry eye showed CD14+ cells, and we wonder if these macrophages and their cytokines are involved in the keratinization typical of the dry eye associated with GVHD.