

Comparative influence of steroid hormones and immunosuppressive agents on autoimmune expression in lacrimal glands of a female mouse model of Sjögren's syndrome

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PURPOSE. Previous research has demonstrated that testosterone therapy causes a profound suppression of autoimmune disease in lacrimal glands of female mouse models of Sjögren's syndrome. The aim of the present study was to determine whether other anabolic androgens, nonandrogenic steroids, or immunosuppressive agents might duplicate this hormonal effect. For comparative purposes, we also evaluated the influence of these various pharmacologic compounds on the tear volume, the magnitude of lymphocyte infiltration in the submandibular gland, and the extent of mucosal and peripheral lymphadenopathy.

METHODS. Female MRL/MpJ-Ipr/Ipr mice were administered vehicle, steroids, or immunosuppressive compounds for 21 days after the onset of disease. Lacrimal glands and tears, as well as submandibular glands, spleens, and superior cervical and mesenteric lymph nodes were collected immediately before or after treatment and then processed for analysis.

RESULTS. Our results showed that: (1) the immunosuppressive impact of testosterone on lymphocyte infiltration in lacrimal tissue was reproduced by the administration of 19-nortestosterone or cyclophosphamide, but not by therapy with 17 β -estradiol, danazol, the experimental steroid Org 4094, cyclosporine A or dexamethasone; (2) treatment with testosterone, 19-nor-testosterone, cyclophosphamide, or dexamethasone significantly reduced the extent of inflammation in salivary glands; (3) exposure to cyclophosphamide markedly diminished the size of lymphatic and splenic tissues, whereas glucocorticoid treatment only decreased the weight of superior cervical lymph nodes; and (4) administration of 17 β -estradiol, Org 4094, or dexamethasone led to a significant decrease in tear volume.

CONCLUSIONS. Overall, these results demonstrate that androgen or cyclophosphamide therapy may successfully ameliorate autoimmune expression in lacrimal and salivary glands of a female mouse model of Sjögren's syndrome.

Mitomycin C as adjunctive therapy with glaucoma implant surgery

OPHTHALMIC SURGERY 25 (7): 458-462, 1994

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ABSTRACT: Twenty-one eyes of 21 patients with refractory glaucoma underwent glaucoma surgery involving placement of a modified Molteno implant and intraoperative application of mitomycin C. Sixteen eyes (76.2%) had an intraocular pressure (IOP) of 21 mmHg or less after a mean follow up of 9.4 ± 6.4 months; additional medication was needed in six eyes. Major complications included early flat

anterior chamber (42.9%), implant plate erosion (9.5%), tube erosion (4.8%), late hypotony (4.8%), tube-corneal touch (4.8%), and phthisis bulbi after choroidal hemorrhage (4.8%). Only one patient had a high IOP due to decreased filtration through the implant. These results suggest that glaucoma implant surgery with the adjunctive use of mitomycin C may be useful in eyes with refractory glaucoma.

Glaucoma associated with epithelial downgrowth controlled with Molteno tube shunts

OPHTHALMIC SURGERY, 23: 797-800, 1992

COSTA, V.P.; KATZ, L.J.; COHEN, E.J.; RABER, I.M.

Wound healing modulation in glaucoma filtration surgery

OPHTHALMIC SURGERY, 24: 152-170, 1993

COSTA, V.P.; SPAETH, G.L.; EIFERMAN, R.A.; ORENGO-NANIA, S.

Modulation of wound healing in association with glaucoma filtration surgery results, in some cases, in lower postoperative intraocular pressures that would occur in the absence of such therapy. Treatments affecting wound healing increase the likelihood of achieving long term filtration, specially in eyes with a poor surgical prognosis.

This review article describes the wound process

following filtration procedures, and the mechanisms of action of some of the different wound healing modulators currently being used or investigated. Complications associated with each substance are discussed. There is a need to develop new drugs or combinations of drugs which will cause less toxicity and be associated with more predictable results.

Loss of visual acuity after trabeculectomy

OPHTHALMOLOGY, 100: 599-612, 1993

Costa, V.P.; Smith, M.; Spaeth, G.L.; Gandhan, S.; Markovitz, B.

BACKGROUND - Glaucoma filtration surgery can result in loss of visual acuity (VA) by a variety of mechanisms. The existence of "wipe-out" (loss of the central visual field in the absence of other explanation) as a cause of postoperative loss of visual acuity has been debated. This study defines the incidence and etiology of VA loss within 3 months of trabeculectomy.

METHODS - We reviewed 508 eyes of 440 patients who underwent trabeculectomy to find cases of postoperative VA loss (2 or more Snellen lines or a category change) and randomly selected a control group of 85 eyes to analyze the risk factors for each cause of VA loss.

RESULTS - Forty-two eyes (8.3%) showed loss of VA after 3 months, caused mainly by lens opacification (n=16), hypotony

maculopathy (n=6), and "wipe-out" (n=4). Older patients ($p=0.0108$), those in whom the visual field preoperatively showed macular splitting ($p=0.0084$), and those who had severe hypotony ($IOP \leq 2 \text{ mmHg}$) on the first postoperative day ($p=0.0246$) were more likely to experience "wipe-out". Older age ($p=0.0495$) and shallow anterior chamber ($p=0.0003$) were correlated to the development of lens opacification. Hypotony maculopathy was associated with coronary artery disease ($p=0.0397$) and systemic hypertension ($p=0.118$).

CONCLUSIONS - Lens opacification was the main cause of early visual acuity loss after trabeculectomy, followed by hypotony maculopathy. "Wipe-out", although rare, does exist, and older patients with advanced visual field defects are at increased risk.