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Service (sector) Cornea and External Disease N° CEP

### **Evaluation of the keratitis and conjunctivitis caused by Streptococcus between 1995 and 2001 at the Paulista School of Medicine.**

Authors: Helena Parente Solari, Luciene Barbosa de Sousa, Denise de Freitas, Maria Cecília Zorat Yu, Ana Luisa Hofling-Lima. Purpose: To evaluate the prevalence and main characteristics of the keratitis and conjunctivitis caused by Streptococcus sp. in the patients from the Ophthalmology Department of the Paulista School of Medicine, from January 1995 to December 2001. Materials and Methods: A retrospective study analyzing the records of the microbiology laboratory of the Ophthalmology Department (Paulista Medicine School). We studied all the records from patients who presented with conjunctivitis or keratitis caused by Streptococcus sp., between January 1995 to December 2001. The collected data were: age, Streptococcus species, antibiotic sensitivities and history of penetrating keratoplasty. Results: In the 1175 samples of bacterial conjunctivitis with a positive culture, 95 (8,08%) were from Streptococcus sp., and the mean age of the patients was 17,5 years. The samples were distributed according to the species in: 16 Streptococcus gamma hemolyticus (16,84%), 36 Streptococcus pneumoniae (37,89%), 2 Streptococcus pyogenes (2,10%), 37 Streptococcus viridans (38,94%), 3 Streptococcus non hemolyticus (3,15%) and 1 Streptococcus sp. (1,05%). The frequency of cases in each month was: January 1 case (1,05%), February 4 cases (4,21%), March 6 cases (6,31%), April 10 cases (10,52%), May 18 cases (18,94%), June 9 cases (9,47%), July 10 cases (10,52%), August 9 cases (9,47%), September 5 cases (5,26%), October 9 cases (9,47%), November 10 cases (10,52%) and December 4 cases (4,21%). In the conjunctivitis cases the antibiotic sensitivities were tested in 39 patients and the results were: 33 sensitive to cephalosporin (84,61%), 8 sensitive to amikacin (20,51%), 11 sensitive to tobramycin (28,20%), 15 sensitive to gentamicin (38,46%), 30 sensitive to ciprofloxacin and lomefloxacin (76,92%) and 31 sensitive to ofloxacin. From the 629 positive bacterial corneal culture 157 (24,96%) were positive to Streptococcus sp., and the mean age of the patients was 46,5 years. The distribution according to the species was: 5 Streptococcus beta hemolyticus (3,18%), 19 Streptococcus gamma hemolyticus (12,10%), 71 Streptococcus pneumoniae (45,22%), 5 Streptococcus pyogenes (3,18%), 50 Streptococcus viridans (31,84%) and 7 Streptococcus sp. (4,45%). The frequency in the different months of the year was: January 11 cases (7,00%), February 3 cases (1,91%), March 13 cases (8,28%), April 12 cases (7,64%), May 26 cases (16,56%), June 17 cases (10,82%), July 16 cases (10,19%), August 14 cases (8,91%), September 10 cases (6,36%), October 13 cases (8,28%), November 11 cases (7,00%) and December 11 cases (7,00%). In the 157 Streptococcus keratitis, 36 (22,92%) were associated with penetrating keratoplasty and in this period the number of patients in the laboratory with a positive history of keratoplasty

was 218, so 16,51% of these patients had Streptococcus as the causative agent of the keratitis. Considering the antibiogram of the patients with keratitis without previous keratoplasty (121), we studied 113 records and the results were: 104 (92,03%) sensitive to cefalosporin, 38 (33,62%) sensitive to amikacin, 43 (38,05%) sensitive to tobramycin, 44 (38,93%) sensitive to gentamicin, 88 (77,87%) sensitive to ciprofloxacin and 92 (81,41%) sensitive to ofloxacin. From the 79 patients tested for lomefloxacin, 54 (68,35%) were sensitive. The antibiogram from the patients with previous penetrating keratoplasty were tested, excluding one patient who had incomplete data. Thirty two (91,42%) patients were sensitive to cefalotin, 9 (25,71%) sensitive to amikacin, 11 (31,42%) sensitive to tobramycin, 9 (25,71%) sensitive to gentamicin, 25 (71,42%) sensitive to ciprofloxacin and ofloxacin, and from the 28 patients tested for lomefloxacin, 15 (53,57%) were sensitive. In the group of the 36 patients with keratoplasty, 17 (47,22%) had an optic transplant, 10 (27,77%) had a tectonic transplant and 9 (25%) had no details in the records. Twenty nine (80,55%) had the infection less than 1 year after the surgery and 7 (19,44%) had a history of more than a year, with the mean time of 42,7 months.

**Conclusion:** Streptococcus presents as a common cause of keratitis and conjunctivitis including cases of infection after penetrating keratoplasty. The highest incidence was in the months with cold climate and the most frequent species were *S. pneumoniae* and *S. viridans*. In the antibiograms there was more sensitivity to cefalosporin, ciprofloxacin, ofloxacin and lomefloxacin.