

PREPARATION OF EYE DROPS FOR VERNAL KERATOCONJUNCTIVITIS: THE PHARMACIST ADDED TO A TEAM ACTS AS A FULCRUM BETWEEN DOCTOR AND PATIENT

Background:

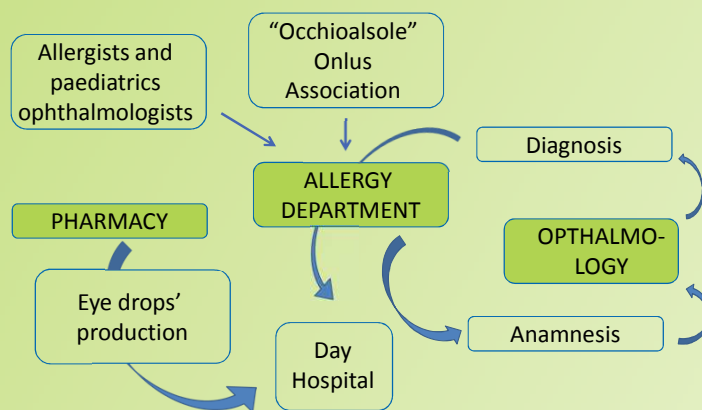
'Vernal Keratoconjunctivitis' (VKC) is an allergic conjunctivitis, often not easily diagnosed and properly treated. The disease is very debilitating for patients, may be complicated by corneal lesions and can evolve to keratoconus.

Purpose:

The exponential increase in VKC patients led us to start a close collaboration between pharmacists and allergists, ophthalmologists, and chemists. The goal was to address and solve problems caused by the lack of adequate knowledge on the VKC, in order to find a diagnostic-therapeutic course, improve patient compliance and provide high-quality products as alternative to conventional therapies.

Material and methods:

After discussion with allergists and ophthalmologists, pharmacists have formulated 3 different kinds of eye drops treatment: cyclosporine 1% and tacrolimus 0.1%, both in methylcellulose 0.15%, and cyclosporine 2% in sunflower oil. The stability of such formulation has been demonstrated by using liquid chromatography coupled to triple quadrupole mass spectrometer. The pharmacist prepares a weekly amount of eye drops, after allergists' communication of the number of children that undergo eye examination. Then, the pharmacist proceeds, after allergists' confirmation, in setting up eye drops to be sent directly to patients' homes in the whole country.



Results:

The LC/MS/MS (Fig.1) and sterility (Fig.2) analysis results allowed the pharmacist to declare a safety of the formulations in methylcellulose 0.15% and in sunflower oil up to 45 days. Such formulations were chosen considering also patient compliance. Indeed, one of the results of the team collaboration has been the development of the formulation in sunflower oil that can be preserved at room temperature; thus leading huge advantages in terms of patients' compliance.

Fig. 1: LC/MS/MS results. Values represent the variation (%) of the analyte/standard AUC ratio at T0 and T50 days.

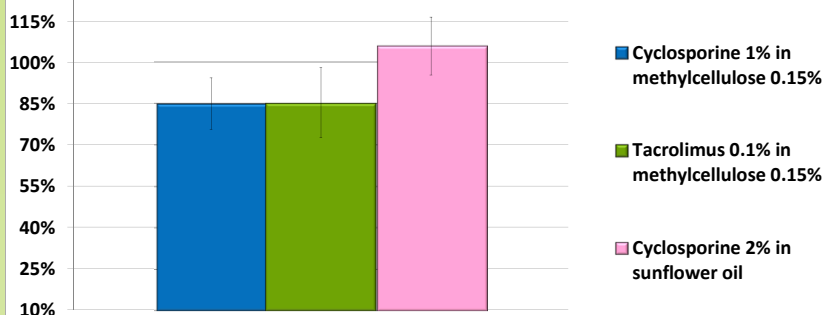


Fig. 2: Sterility results by using the BacT/ALERT® colorimetric assay system. Results are shown in terms of microbial absence (-) or presence (+).

Micro organism	Cyclosp. 1% in methylcell. 0.15%			Tacr. 0.1% in methylcell. 0.15%			Cyclosp. 2% in sunflower oil		
	Aerobic bact.	Anaer. bact.	Fungi	Aerobic bact.	Anaer. bacteria	Fungi	Aerobic bact.	Anaer. Bact.	Fungi
Day 0	-	-	-	-	-	-	-	-	-
Day 14	-	-	-	-	-	-	-	-	-
Day 21	-	-	-	-	-	-	-	-	-
Day 90	-	-	-	-	-	-	-	-	-

Conclusion:

The preparation of a galenic formulation of such quality has contributed to the efficacy of the treatment. Moreover, the sharing of information between medical doctors, pharmacists and nurses guaranteed a personalized assistance that is highly responsive to health needs.



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