the temperature in the column compartment was 40°C. The column used was the Xterra C18 because methadone pKa is 8.3. Retention time for methadone was 4.5 min and for parabens 1.5 min.

The final methadone determination method was validated for a standard of 10 mg/mL and applied for the determination of methadone with two parabens. The most relevant results were: correlation coefficient $r=0.9957$ for methadone in the range tested (7.5–12.5 mg/mL); instrumental precision 0.33% for standards ($n=10$); intra-assay precision 0.53% ($n=6$) and inter-assay precision 1.95% ($n=12$). The relative standard deviation percentage for accuracy was 1.28%, and the percentage recovery was $101.5 \pm 1.5\%$.

Conclusion and relevance Analytical method development and validation procedures are vital in the discovery and development of drugs and pharmaceuticals to ensure performance of the method. The proposed HPLC conditions to determine methadone were proved to be valid and reproducible for carrying out physicochemical stability studies of different methadone oral solutions.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-031 CURRENT STATE OF THE ANTI-INFECTIVE OPHTHALMIC COMPOUNDING FORMULATION IN PHARMACY SERVICES: A NATIONAL SURVEY

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10.1136/ejhp-2020-eahpconf.78

Background and importance The ophthalmic formulation has for decades been postulated as the only alternative for the treatment of serious infective ocular diseases, since commercial presentations are not available. For this reason, most of these compounded formulas are made in hospital pharmacy services.

Aim and objectives To summarise the current state and processing variability of anti-infective ophthalmic compounded formulas through survey to pharmacists from different hospitals in the country.

Material and methods A survey was developed with questions related to anti-infective ophthalmic compounding formulations: facilities, stockage, use of freezing/preservatives, packaging, vehicles and validity periods. The questionnaire was developed through Google Forms and sent by email to hospital pharmacists nationwide in September 2019.

Results A total of 163 pharmacists from different hospital pharmacy departments answered the survey. Only 80% has installations that met the requirements of the Good Pharmacy Practice manual: 34% prepared anti-infective formulations on demand, while the rest had a stock. The median of the maximum eye drops/batch was 9.9 (IQR 3–10), and the median of the maximum intravitreal injections/batch was 10 (IQR 2–25). Related to eye drops, 49% used freezing on a regular basis, 26% under exceptional conditions and 25% never; while for intravitreal injections, the values were 47%, 13% and 40%, respectively. Eighty per cent never used ophthalmic preservatives while 20% used them under exceptional conditions. For the packaging of vancomycin eye drops, 82% used plastic, 15% glass and 3% both. As a vehicle for vancomycin eye drops, 36% used 0.9% NaCl, 25% DW 5%, 31% balanced

salt solution, 7% artificial tears and 1% water for injection. Validity period was established according to: 53% bibliography, 40% risk matrix in the Good Pharmacy Practice manual, 6% both and 1% according to reference hospital standardised work procedures.

Conclusion and relevance Great variability was observed regarding the methodology used for the preparation of ophthalmic compounded formulas in hospitals throughout the country, highlighting the differences in the elaboration, packing and conservation of the same anti-infective ophthalmic compounding formulations.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Good Pharmacy Practice: <https://www.msccs.gob.es/profesionales/farmacia/documentacion.htm>

Thanks to the pharmacists who completed the survey.

No conflict of interest.

3PC-032 AUTOLOGOUS TISSUE ADHESIVE IN OPHTHALMOLOGICAL SURGERY

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10.1136/ejhp-2020-eahpconf.79

Background and importance Sutures to replace tissue adhesives have enhanced importance. However, commercialised drugs are allogenic, synthetic and expensive, increasing surgery costs.

Aim and objectives

1. To produce an autologous tissue adhesive (ATA) easily compounded in ophthalmological surgery.
2. To show evidences of the safe and effectiveness of the ATA in preclinical studies.

Material and methods To produce 4 mL of ATA based on a fibrinogen (FC) and thrombin concentrate (TC) (proportion 1:1), 20 mL of donor blood plasma were precipitated with protamine to prepare FC, and then 20 mL of plasma were precipitated with acetic acid to obtain a TC in a buffer (CaCl₂, NaHCO₃, NaCl). Drug was conditioned in two 2 mL syringes for topical ophthalmic administration by mixing with a needle.

The in vitro toxicity of the drug was studied in a human corneal epithelial model (described as QobuR), to evaluate the grade of irritation after 30 min of exposition time.¹

Pterygium surgery was performed in four eyes of white New Zealand rabbits, using ATA to fix a frontal conjunctival autograft (4×5 mm) into the temporal bulbar conjunctive.

The grafted eyes were evaluated in vivo by clinical evaluation for 14–28 days and ex vivo by histology.

Results ATA produced from each donor showed a mean of 18.0 g/L of fibrinogen and 1500 UI/mL of thrombin. ATA instantly produced homogeneous clots when it was mixed with a needle.

Three in vitro studies of four ATA showed non-irritation due to high survival cell viabilities (>80%).

Good preclinical results were found:

- 20 mm² autograft could be fixed successfully.

- Time for complete tissue adhesion was minimal (3–5 min).
- Inflammation and adverse events were absent in all cases.
- The prospective clinical evaluation was positive for follow-up in all cases and included integration and vascularisation of the grafts.

Histology supported the *in vivo* evidence. Staining of the autograft section showed inner vessels and the regeneration of the surrounding conjunctive tissue.

Conclusion and relevance It is possible to compound an ATA easily from whole blood, in a hospital pharmacy, for ophthalmological surgery, where the necessary volume is very low. This ATA was safe and effective, supported by our preclinical studies. This ATA could allow the possibility of replacing the suture in surgery with a low cost drug.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

3PC-033 INTRACAMERAL AND INTRASTROMAL VORICONAZOLE ADMINISTRATION IN FUSARIUM KERATITIS

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10.1136/ejhp-pharm-2020-eahpconf.80

Background and importance Fungal keratitis is an infection of the cornea caused by fungi. The clinical symptoms include pain, secretions, blurred vision and photophobia. They are usually caused by the genus of filamentous fungi *Aspergillus*, *Fusarium* and *Penicillium*. Conventional treatment combines topical natamycin, voriconazole and moxifloxacin, in addition to oral voriconazole. Nevertheless, therapy for those refractory to treatment is not clear.

Aim and objectives We present a case of filamentary keratitis caused by *Fusarium* in a contact lenses wearer. The inefficacy of conventional treatment, together with the deep location of the infection, led to a search for therapeutic alternatives, opting for intracameral and intrastromal voriconazole injection at 0.05%. The efficacy of the preparation was evaluated.

Material and methods Voriconazole syringes 0.5 mL were prepared at a concentration of 0.05%. In a vertical laminar flow hood, the 200 mg voriconazole vial was reconstituted with 19 mL of water for injection (solution of 10 mg/mL). Physiological serum (19 mL) was loaded into a 50 mL syringe and 1 mL of reconstituted voriconazole was taken in an insulin syringe and transferred to the 50 mL syringe (solution of 0.5 mg/mL=0.05%). A 0.2 µm filter was adapted and 0.5 mL added to a 1 mL syringe. The reconstituted vial and preparation were stable after 24 hours at 2–8°C.

Efficacy was evaluated with the following criteria: abscess size, hypopyon level (fibrin and leucocytes in the anterior chamber) and tyndall (inflammatory cells in the anterior chamber).

Results A 34-year-old man, a contact lenses wearer, was diagnosed with *Fusarium* infection. He was refractory to conventional treatment and was started on therapy with intrastromal and intracameral injections of voriconazole 0.05%. The patient received three doses. The response obtained was satisfactory,

progressively decreasing the size of the abscess, the level of hypopyon and tyndall. Resolution of the infection was achieved in a period of 2 months. The patient has been progressively reducing the topical antibiotic and antifungal treatment, and currently all medication has been withdrawn.

Conclusion and relevance Compared with several published studies in which the use of 0.05% and even 1% intracameral voriconazole showed no efficacy for the treatment of *Fusarium* keratitis, our experience with this case demonstrates that it is an effective strategy which accelerate the resolution of the infection and prevents further complications.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-034 CONTENT UNIFORMITY OF EXTEMPORANEOUS COMPOUNDED SUSPENSIONS

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10.1136/ejhp-pharm-2020-eahpconf.81

Background and importance There is still a need for non-sterile compounded medications for paediatric and elderly patients (eg, when dose adjustments are required or there are swallowing difficulties). Pharmacists generally have the choice between compounding capsules or oral liquids. Extemporaneous compounded oral liquids are often a more convenient and better adhered alternative to capsules, as they are swift to prepare and can allow dosing flexibility. Given their importance, drug substance content should be within the predetermined range, determined as content uniformity, as defined by the various pharmacopoeias: United States Pharmacopoeia, European Pharmacopoeia and British Pharmacopoeia.

Aim and objectives SyrSpend SF is an oral liquid vehicle range that has specific rheological properties to ensure dosing consistency throughout therapy. In this study, we present the content uniformity of a wide range of different active pharmaceutical ingredients in SyrSpend SF under refrigerated conditions and at room temperature, compared with what is known for the content uniformity of extemporaneous prepared capsules.

Material and methods In the study, 6414 samples were analysed by high performance liquid chromatography (HPLC-UV) for 93 different active pharmaceutical ingredients at controlled room temperature (15–25°C) and 105 active pharmaceutical ingredients under refrigerated conditions (2–8°C). Calculations were only performed until the maximum beyond use date of the sample. Acceptance values (AVs) were calculated for all of the different active pharmaceutical ingredients, at all time points and temperatures.

Results The mean AVs for room temperature and the controlled refrigerated temperature were 3.12 and 3.17, respectively (AV should be <15.0), indicating that all active pharmaceutical ingredients complied with the content uniformity specifications. The mean concentration of all samples was 100.30% at room temperature and 100.34% at the refrigerated temperature.

Conclusion and relevance Compounded oral liquids in SyrSpend SF showed little variation in content for all active pharmaceutical ingredients, and when evaluated according to