- 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.

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No conflict of interest.

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

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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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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

the pharmacopoeia content uniformity guidelines, all were well within the criteria defined. This indicates that compounding oral liquids in SyrSpend SF could be a suitable alternative when compounding individualised medication for patients.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of interest Corporate sponsored research or other substantive relationships:

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3PC-035 93% OXYGEN SELF-PRODUCTION: EXPERIENCE IN AN ITALIAN HOSPITAL

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Background and importance The introduction of 93% oxygen (±3%) in the EU Pharmacopoeia has allowed its therapeutic use. Production costs are related to electricity and maintenance. Each oxygen cubic meter (m^3) produced consumes 0.75 kWh, approximately € 0.21/m^3, while gaseous oxygen in cylinders for system backup costs about € 0.50/m^3. The production plant works at low pressures (8 vs 200 bar) and is compact.

Aim and objectives The objective was to estimate 93% oxygen consumption in 2018 in a hospital equipped with this system to compare the cost versus the purchase 99% oxygen.

Material and methods Data were acquired from the plant located in a small hospital (33 places): percentage purity, energy consumption, possible interruption of operation and quantity produced. Data were subsequently processed by Microsoft Excel software.

Results In 2018, 12 095 m^3 of 93% oxygen were produced for an electricity charge of € 2539.95. During the year before the installation (2014), 18 000 m^3 of oxygen 93% were consumed for a cost of around € 55 000. The cost reduction was over 50%. Oxygen content always remained within the range (average 94.88%, maximum 95.89%, minimum 93.22%). The randomised controlled trial (RCT) that took place in the first year of use to demonstrate the overlapping efficacy of the two alternatives gave the following results:

- 93% oxygen group: 95% l/min flow, 91% sat O_2, in range, 92% EGA T1 in range;
- Oxygen group 99%: 97% l/min flow, 90% sat O_2, in range, 93% EGA T1 in range.

Conclusion and relevance This analysis highlights the goodness of the investment and the reliability of the system. The annual consumption of oxygen was reduced due to less waste compared with the use of 99% oxygen cylinders. Significant savings have been made for the hospital, maintaining the quality, safety and efficacy of the drug, as demonstrated by the RCT performed.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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3PC-036 CASE STUDY: DEVELOPMENT OF AN OINTMENT ACCORDING TO THE PHARMACEUTICAL INSPECTION CONVENTION GUIDELINE

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Background and importance Haemorrhoid treatment has a significant community and hospital pharmacy burden. Treatment options are varied but in non-severe cases, topical is usually the form of administration selected. In this ointment, three pharmacological effects are combined, mainly found in commercial forms through a simple manufacturing procedure, accessible to the facilities of a hospital pharmacy laboratory.[1] The Pharmaceutical Inspection Convention, published in March 2014, is a guideline for healthcare establishments to ensure the quality of medicines manufactured in pharmaceutical services.

Aim and objectives To develop a semisolid pharmaceutical form for haemorrhoid treatment. This form contained a vasoconstrictor, local anaesthetic and glucocorticoid. Application of the current guidelines to the elaboration of medicines in the hospital pharmacy was applied.[2]

Material and methods Material: ointment base—vaseline, paraffin and levomenthol; APIs—phenylephrine hydrochloride, lidocaine hydrochloride and hydrocortisone. Equipment: electronic analytical scale pinacle; Agilent Series 1100 with quaternary pump and diode array detector; and ThermoScientific Haake Viscotester 550. The organoleptic characteristics and rheologic properties were assessed. Content homogeneity of the three APIs was proved through a high performance liquid chromatography (HPLC) validated method.[3]

Results A manufacturing system in the hospital pharmacy was developed following the concept of quality by design.[4] A quality assurance system was established to supervise the whole manufacturing process and documentation. Full pharmaceutical characterisation was developed, including the development and validation of a HPLC method to quantify the three APIs in the ointment.

Conclusion and relevance This work corroborates the fact that application of these guidelines in combination with the International Conference of Harmonisation instructions is both feasible and convenient in terms of manufacturing medicinal products in healthcare establishments. This methodology will be implemented in the manufacture of more complex medicinal products in subsequent work.

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