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ELABORATION OF DEFEROXAMINE EMULSION 0,5% FOR HYPERPIGMENTATION DUE TO INTRAVENOUS IRON EXTRAVASATION

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Background and importance

➡ **Cutaneous hyperpigmentation** due to iron extravasation is a described adverse effect of its intravenous administration.

Aim and objectives

1. To describe the **components** and the **method of preparation** of a **0.5% deferoxamine .**
2. To describe **efficacy and tolerance** on a hospitalized patient.

Materials and methods

➡ **Literature research**: Google Schoolar, PubMed, Spanish Society of Hospital Pharmacy formulary, Acofarma website.

➡ **Direct observation** of the stain twice a week during 30 days comparing with photographs and interviewing the patient.

Results

COMPOSITION:

- Deferoxamine 0.5g (commercially available lyophilized powder).
- Propylene glycol 20g.
- NeoPCL self-emulsifier O/W 25g.
- Purified water in sufficient quantity for 100g.

➡ NeoPCL was chosen instead of Beeler base, which allowed the formation of an **aqueous external phase emulsion, not very oily, dense, but easy to apply topically.**

METODOLOGY:

1. Reconstitute deferoxamine-liophilized with 10 ml of purified water.
2. Weigh water, propylene glycol and NeoPCL separately and place them in water bath at 60ºC.
3. Stir NeoPCL to facilitate the fusion and add propylene glycol gradually while stirring.
4. Add the deferoxamine solution over the previous mixture, stirring constantly until obtaining the oleo-aqueous emulsion.
5. Stir for 2-3 minutes with an emulsifier.

FINAL APPEARANCE

Homogeneous white emulsion with no lumps and no characteristic odor.

According to the local **Guide of Good Practices:**

- 30-day expiration period.
- Storage conditions: room temperature and protection from light.

✓ **GALENIC VALIDATION**

WHAT HAPPENED?

Fifteen days after the extravasation, the emulsion was applied every 12 hours during four weeks.

- **Slight improvement.**
- **No adverse reactions reported.**

Conclusion and relevance

➡ The self-emulsifying O/W base ensured that the **emulsion remained stable** throughout the shelf life.

➡ The results didn't match with those described in the literature. **Time** between the extravasation and the application of the emulsion **was a limiting factor** to have observed better results.