

Physical and microbial stability of three extemporaneously compounded medicines in selected pharmacies in Uva and Southern Provinces

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In-house preparation of medications called extemporaneous compounds meets specific patient needs when no commercial alternative is available. This study aimed to determine the stability of Calamine lotion BP (CLBP), 2% cetrimide shampoo BP (2% CS), and 10% urea in aqueous cream BP (10% UA) within a month until their expiration. CLBP, 2% CS (100ml each), and 10% UA (100 g) were collected from two pharmacies where these formulations were available. Visual appearance, pH, and viscosity were assessed to determine physical stability utilizing a pH meter and viscometer. Spreadability was determined for UA via the parallel plate method. Foam ability, foam stability, and solid content of CS were measured. Microbial stability of CS and UA was evaluated using colony-forming unit (CFU) values, through the streak plate method. All tests were performed according to the British Pharmacopeia on the day of preparation, after 15 days, and after 30 days at the Department of Pharmacy, University of Ruhuna. Changes in colour and odour along with clear phase separation were observed in CLBP. CS showed changes in odour, and clarity, reduced solid content, 9.7% to 1.7%, and increased foam ability, 18 ml to 22 ml, and foam stability, 15 ml to 16 ml. UA remained visually unchanged with variations in spreadability around 3000 mm² - 6000 mm² range. Viscosity of all samples decreased, and pH values showed minimal changes around 7 - 9.8 range. CFU revealed an increase in colonies, 4 to 27 in UA, and a decrease in colonies, 1876 to 709 in CS. Based on these results, it is concluded that there are certain issues related to the stability of the tested products, suggesting the need for further studies.

Keywords: Calamine lotion, cetrimide shampoo, extemporaneous medications, urea aqueous cream

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