Potency of Extemporaneous Gentamicin Eye Drops Used in Maharaj Nakorn Chiang Mai Hospital

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ABSTRACT

This study evaluated the potency of extemporaneous gentamicin (13.6 mg/ml) eye drops, stored for 4 weeks. The effects of different storage temperatures on the antimibrobial potency were examined. Gentamicin (13.6 mg/ml) was prepared with aseptic technique and the solutions stored at 2-8°C and 28°C for 28 days.

The fortified stock solutions of gentamicin (13.6 mg/ml) were prepared by reconstituting gentamicin (0.3%) eye drops with gentamicin (40 mg/ml) injection. The potency was evaluated by measuring the minimum inhibitory concentration.

Throughout the 28-day period, no change was observed in the minimum inhibitory concentration of gentamicin (13.6 mg/ml) stored at 2-8°C and 28°C.

Extemporaneously - prepared gentamicin (13.6 mg/ml) eye drops remained stable at 2-8°C and 28°C for 28 days.

Key words: Gentamicin eye drops, Potency

INTRODUCTION

In Maharaj Nakorn Chiang Mai Hospital, the traditional treatment of bacterial keratitis includes the use of antibiotic eye drops, often a combination of cefazolin sodium (33 mg/ml) and gentamicin (13.6 mg/ml) (Tananuvat et al., 2004). These formulations are prepared by Division of Pharmacy in Maharaj Nakorn Chiang Mai Hospital. Commercial preparations of low-dose topical antibiotics are generally for many superficial infections but extemporaneous preparations of ophthalmic antibiotics are required for the treatment of severe sight-threatening ocular infection. These medications are usually prepared by combining standard parenteral or lyophilized antibiotic preparations with 0.9% sodium chloride injection or