

Penicillin Residues in Milk Following Subconjunctival Injection of Procaine Penicillin G

K Liljebjelke, LD Warnick, and MF Witt

Department of Population Medicine and Diagnostic Sciences, Cornell University, Ithaca, New York

Introduction

Subconjunctival injection of procaine penicillin G is used to treat infectious bovine keratoconjunctivitis. The purpose of this project was to find out how long penicillin can be detected in milk after a single 1 ml bulbar subconjunctival injection of procaine penicillin G.

Materials and Methods

Forty-six healthy, lactating Holstein cows were randomly assigned to receive either the penicillin injection or no treatment. A few drops of proparacaine were administered topically before injecting penicillin. Cow weights ranged from 1177 to 1716 lb (535 - 780 kg) (median = 1342 lb (610 kg) resulting in a penicillin dose of about 385 to 560 units per kg body weight. Milk samples were collected before treatment and at each of the next 4 milkings (4 hr, 16 hr, 28 hr, 40 hr) after treatment.

Some cows were also sampled at 10 hr and 22 hr post-treatment to determine the number of positive tests midway between milkings.

Results

No milk samples from untreated cows were positive for B-lactam antibiotic residues using the SNAP[®] test (IDEXX Laboratories Inc., Westbrook, Maine 04092). The earliest positive tests for treated cows occurred at 4 hours and the latest at 22 hours after treatment. For pre-treatment, percentages positive among treated cows were 0, 9, 92, 52, 33, 0 and 0%. Forty hours after treatment, percentages positive among treated cows were 4, 10, 16, 22 and 28. These results suggest that a 36 hour milk withholding period should be adequate following this therapy. However, we did not evaluate the potential effect of clinical pinkeye infections on the duration of milk penicillin residues.