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A Case Control Study of Non-Reactor Cattle that Disclosed Tuberculous Lesions at Slaughter

L.A. Dolan and J.M. Griffin

Introduction

This study was undertaken to compare the previous tuberculin testing history of cattle that had tuberculous lesions identified at slaughter with cattle from the same County that were slaughtered on the same day and disclosed no lesions. The principal point of interest was the proportion of each group of cattle that were ineligible for export to EC Member States on the basis of the export standard of interpretation of the Single Intradermal Comparative Cervical Test (S.I.C.C.T.) prior to slaughter.

The sample of cases studied were attested cattle from Counties Cavan, Clare, Kilkenny, Mayo, Offaly and Tipperary South that had tuberculous lesions identified at slaughter during the period 1988 to 1990, inclusive. The details of the cases were supplied by the relevant DVO's and primary information on the controls was sought from the relevant slaughter plants.

Results

A total of 113 matched pairs were available for analysis. In 93 of these, both the case and control animals had undergone a tuberculin test in the herds from which they were sent for slaughter.

The tuberculin test interpretation, giving the least favourable result from all tests carried out on the animals in the herd from which they were sent for slaughter, for both the case and control animal, is recorded in Table 1.

The data was analysed using McNemar's analysis of correlated proportions.

Table 1. The details of the tuberculin test interpretation for 93 matched pairs of animals that did and did not have tuberculous lesions at PME.

| | Test Interpretation | | | Tot. |
|---------|---------------------|--------------|---------------|------|
| | Neg. | Export Pos.* | Stand. Incon. | |
| Case | 52 | 14 | 27 | 93 |
| Control | 62 | 20 | 11 | 93 |

The proportion of case animals that had not undergone a tuberculin test in the herd from which they were sent for slaughter was significantly less than for the control animals, i.e. of 20 matched pairs one case animal had no test compared with 19 control animals that had no test ($P=0.0001$).

In respect of standard inconclusive animals the case group had a significantly higher proportion of such animals ($P=0.008$). There was no statistical difference between the proportions of case and control animals that were negative on the tuberculin test or were export test positive* but not standard inconclusive ($P=0.82$).

* "Export positive" denotes ineligibility for export to another Member State of the European Community.

Overall when the proportion of case and control animals that were positive to the export test or were standard inconclusives are compared with those that were negative there was no statistical difference ($P=0.22$). This analysis was based on the data summarised in Table 1.

Discussion

The proportion of control animals that had not had a test in the herd of origin was significantly greater than for the case animals. This may indicate that the control animals came from clear herds in which fewer tests were carried out during the period that the control animals were present.

Significantly more case animals were standard inconclusives on a test, a result that would be expected in a group of animals that subsequently disclosed tuberculous lesions on post-mortem examination.

In the population under study the risk of disclosure of a tuberculous lesion in an attested animal which previously had exhibited an increase of 3mm. or more in skin thickness at 72 hours following the injection of bovine tuberculin appeared to be no greater than in other cattle. Likewise there was no apparent difference regarding the eligibility for export to other EC Member States of the test and control animals in this sample on the grounds of bovine tuberculosis.

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