RESUMO - HELMINTOLOGIA

HISTOCHEMICAL CHARACTERIZATION OF EFFECTOR CELLS IN THE LOCAL IMMUNE RESPONSE TO HAEMONCHUS CONTORTUS INFECTION IN LAMBS OF DIFFERENT BREEDS AND B-GLOBIN HAPLOTYPES

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The local immune response in the abomasal mucosa plays a central role in Haemonchus contortus infection, particularly through the recruitment of eosinophils and globule leukocytes, cells associated with the anti-helminth response in the gastrointestinal mucosa. These cell populations participate in effector mechanisms such as the release of inflammatory mediators and cytokines, which influence parasite establishment and development. Thus, their intensity and distribution reflect the dynamics of the host response and are relevant indicators of resistance or susceptibility to haemonchosis. The present study aimed to characterize the presence of eosinophils and globule leukocytes in the abomasal mucosa of lambs from Santa Inês (SI), Texel (TX), and White

Dorper (WD) breeds that were genotyped for ß-globin haplotypes (AA, AB, and BB) and experimentally infected with 4,000 L3 of H. contortus. Abomasal fragments were collected after slaughter for histological processing and Luna staining. Cell counts were performed using ImageJ software on five randomly selected fields (400×). A tendency toward a significant effect of haplotype on globule leukocytes was observed (p = 0.0701), with higher counts in Hb-BB animals (46.4 ± 8.5), followed by Hb-AB (21.5 ± 9.2) and Hb-AA (15.3 ± 9.1), with no differences among breeds. For eosinophils, there was a tendency toward a significant difference among breeds (p = 0.0672), with WD animals (18.0 ± 6.6) showing higher counts, followed by TX (10.1 ± 2.0) and SI (9.9 ± 3.1), and no significant effect of haplotype (p = 0.1205). However, a significant interaction between breed and haplotype was observed (p = 0.0184), indicating that the eosinophilic response depends on the combination of different genetic factors. Therefore, the eosinophilic response appears to be multifactorial, whereas globule leukocytes show a more consistent pattern, being primarily influenced by the ß-globin haplotype. These findings highlight that different genetic components distinctly influence the local immune response, which may contribute to strategies for selecting animals with greater resistance to haemonchosis.

Palavras-chave: mucosal immune response; histochemistry; gastrointestinal nematodes; sheep.