# EOSINOPHILIA INDUCED BY *A. SUUM* INFECTION MAY BE ASSOCIATED WITH REGRESSION OF METASTASES IN 4T1 MURINE BREAST CARCINOMA

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Some studies suggest that eosinophils play a beneficial role in tumor regression. Our group has shown that *A. suum* infection triggers a persistent immune response, leading to eosinophil recruitment to tissues. However, their role in cancer progression remains unknown. Thus, we used female BALB/c mice infected with 250 or 2500 *A. suum* eggs to investigate parasite-induced inflammation in breast cancer. After 14 days, $1\times10^6$ 4T1 cells were subcutaneously inoculated into the right flank. Tumor growth and survival were assessed. After 21 days, animals were euthanized, and lung tissue was collected for histopathological analysis and cytokine quantification, while tumor and BAL samples were used in flow cytometry. To improve metastasis detection, mice received an intravenous injection of 100µCi of radiolabeled peptide, and scintigraphic images were obtained four hours later and lung radioactivity was measured using a gamma counter. Mice infected with 250 eggs had reduced survival. Histopathology analysis showed increased inflammatory infiltrate in the 2500-infected group, while the 250-infected group had a weaker response, associated with less metastasis control.Higher-dose infection led to increased inflammatory infiltration and cytokine expression but reduced metastatic foci. Conversely, lower-dose infection resulted in a weaker immune response, lower cytokine levels, and greater metastatic burden, confirmed by radioisotope imaging. Flow cytometry showed increased BAL cellularity, with eosinophil predominance in the high-dose group. Given *A. suum*-induced eosinophilia, we conducted a pilot study comparing survival between wild-type (WT) and GATA1-/- mice with cancer. The absence of GATA1 led to decreased survival with a Hazard Ratio of 3.429. In summary, high-dose *A. suum* infection reduced metastatic foci in the lung without worsening the clinical condition. Our findings suggest that eosinophils play a role in controlling metastases, warranting further investigation.

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