Poster Presentation

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Evaluation of Toxocara cati on allergic asthma in BALB/c mice

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Objective: Toxocara cati is the roundworm of cats, which humans can infect by ingesting infective eggs in cat faces. Epidemiological studies have shown that infection with Toxocara contributes to the development of allergic manifestations, including asthma. Clinical symptoms such as wheezing, coughing and episodic airflow obstruction have been described for patients infected with this helminth. To investigate the association between infection with Toxocara cati and allergy, we examined the effect of T. cati infection on allergic manifestations by combining a murine model for toxocariasis and the experimental model for allergic airway inflammation.

Material and Methods: The groups consisted of mice infected with T. cati on day 0 (Tox-3); infected with T. cati and 3 days post-infection treated with OVA (Tox-3+OVA); OVA treated
only (OVA) and control uninfected and untreated animals (Ctrl). Mice were infected by a single oral administration with 500 embryonated Toxocara cati eggs followed by ovalbumin (OVA)
sensitization and challenge to induce allergic airway inflammation. Treatment with OVA consisted of 16 days in total with initial sensitization by two intraperitoneal (i.p.). In order to characterize the effect of Toxocara cati infection on the lungs,all groups were killed on day 20 and allergic asthma was evaluated based on histopathology. Histological changes such as peribronchiolitis, perivascular infiltrate, hypertrophy of goblet cells, alveolitis and eosinophil influx were scored from absent (0), minimal (1), slight (2), moderate (3), marked (4) to severe (5). Statistical analysis between groups was done with Kruskal Wallis test ($p<0.05$).

Results: Mice that were infected with Toxocara cati and then treated with OVA (Tox-3+OVA) showed increased pathology compared with mice that were only infected with Toxocara cati (Tox-3) or with the OVA-treated group of animals. In the control group (Ctrl), no histological lesions were observed.