

INTESTINAL ANAPHYLAXIS DURING HYPERSENSITIVITY REACTIONS IN GALLUS DOMESTICUS AGAINST DIFFERENT DOSES OF EGG ANTIGEN OF *ASCARIDIA GALLI*

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ABSTRACT : Epithelial cells at all mucosal surfaces are potentially opposed to gastrointestinal nematode secreted antigens, particularly in the intestine. Intestine play very important role in mucosal defence against against several pathogens. *A.galli* produce allergens in sensitized and hyper sensitized chicks during its life cycle inside the gallus domestics in different phages (L1, L2, L3). The interaction of IECs with antigens of gastrointestinal nematodes can result in a decrease in barrier function and the development of inflammation (canny. G), the response of the chicken intestine to antigenic stimulation is consistent with type I hypersensitivity reactions. For the present investigation, chicks (3 groups A,B,C having 6 chicks in) were sensitized with the low dose (500 eggs/chick) and high dose (1000) of egg antigens at 15th day of the experiment. Sensitized chicks were hypersensitized with same doses at 10th day of the experiment. 2 chicks from each group were autpiced at 25th, 35th and 45th day of the experiment subsequently. Intestinal tissues were taken out at each dissection of the white leg horn chicks for the study of inflammatory changes in intestinal wall during interaction with antigenic stimulation of *Ascaridia galli*.

Key words : Mucosal defence, intestine defence, inflammation, hypersensitivity reaction-I, *Ascaridia galli*.

INTRODUCTION

Intestine is a key component of functional immunity (mucosal immune response). Intestinal epithelial cells (IECs) represent an important barrier between lamina propria cells and the potentially harmful gastrointestinal nematodes. In addition, intestinal epithelial cells (IECs) are important immunoeffector cells with the capacity to release chemokines and other molecules involved in antigen presentation and immune defense. The interaction of IECs with intestinal bacteria can result in a decrease in barrier function and the development of inflammation (hypersensitivity reaction-1), which is known to be an important factor in the development of intestinal pathology. Degree of inflammation is directly propotional to the level of dose antigens. The potential role of such crosstalk between antigen and other intestinal cell types in normal physiology and/or pathophysiology is therefore a topic of intense investigation. The permeability changes in the chicken intestine are hypothesized to be mediated by mast cell-derived paracrine factors.

MATERIALS AND METHODS

Various aspects of hypersensitivity reactions consist of the following studies :

Experimental host- Male white leg horn chicks

Experimental parasite- *Ascaridia galli*

Dose of infection

Low dose – 1000 embryonated pure eggs/chick.

High dose – 2000 embryonated pure eggs/chick.

Culturing of the eggs

Adult worms were isolated from the intestine of fowl from the local abattoir. *A .galli* eggs were cultured upto infective stage. The worms were gently squeezed with uniform pressure until the entire reproductive organs passed out into the culture medium in the petridish. Now fertilized eggs have been separated from the uteri. The eggs were kept in sterile solution at 32°C for embryonation for 2-3 weeks. Now these embryonated eggs per dose (estimated by dilution technique) have been given orally for sensitization and hypersensitization of the chicks.

Infection to experimental host

White leg horn chicks were grouped and labeled properly. The inocula with desired number of embryonated infective eggs (1000 eggs as low dose and 2000 eggs as high dose) were administered orally to 15 days old WLH chicks. After infection, the chicks were kept separately in spacious wooden cages in the animal house.