In Vitro effects of Immunoglobulin G on Neutrophil Activity against bovine mastitis causing Streptococcus uberis

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Abstract The effect of immunoglobulin G (IgG) on neutrophil activity in vitro against bovine mastitis causing S. uberis was investigated. Sources of IgG were from milk and serum samples which were collected from S. uberis intramammary infection (IMI) lactating cows, healthy cows, and in hyperimmune serum of immunized S. uberis Clinical Mastitis (CM) and Subclinical Mastitis (SCM) isolated calves. A third group of saline injected calves served as control. Milk, serum and hyperimmune serum were investigated by determining S. uberis-specific IgG on neutrophil activities, including evaluate of phagocytosis activity with FITC-labeled S. uberis by flow cytometry and determine killing ability of S. uberis by plate count method. Results showed that IgG derived from serum of S. uberis IMI cases influence on phagocytosis in both CM and SCM isolates but could not influence on killing ability, on the other hand, IgG derived from milk of S. uberis IMI cases influence on killing ability of neutrophil in both isolations. However, S. uberis-specific IgG from hyperimmune serum of immunized S. uberis CM and SCM isolated calves influence on phagocytosis in S. uberis SCM isolate but could not clearly influence on killing ability in CM isolation.

Keywords: Immunoglobulin G Neutrophil activity Streptococcus uberis Bovine mastitis