

P 60 | Passive transfer of immunity: evaluation of mare colostrum quality and immunoglobulin G concentration in the new-born foal

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Ingestion of high quality colostrum at birth is a determinant factor influencing a foal's health. As no antibodies pass through the mare's diffuse epitheliochorial placenta, failure of passive transfer (FPT) is an important cause of morbidity and mortality during the first month of foals' life. FPT is defined as serum immunoglobulin G (IgG) concentration <400 mg/dl at 24 h of age. Mare's breed, age, nutrition and vaccination protocol have been described as having influence on colostrum quality, however, previous results reveal inconsistencies. The aim of this study was to evaluate the influence of different factors related to the mare on colostrum quality (IgG concentration) and its relationship with foal's IgG serum levels between 12 and 24 h of life. In this study, 131 mares of different breeds (Lusitano, French Trotter, Warmblood and Arabian/Anglo-Arabian) and ages (4–10 years old) were monitored during four breeding seasons (2014–2017). All mares were from the same stud farm and had the same pre-partum management, within each year. Colostrum quality was evaluated using a Brix refractometer (RHB-32[®]) and IgG levels were accessed through a commercial kit (DVM Rapid Test II[®]). Considering the breed, Arabian/Anglo-Arabian mares showed the lowest Brix % ($p < 0.01$). Age, parity and foaling season had no influence on colostrum quality ($p > 0.05$). However, a progressive increase of colostrum quality was observed until 2016 ($p < 0.05$) which could be ascribed to an improvement of stud farm practices such as nutrition and vaccination protocols. In the present study, a positive correlation between colostrum density and IgG foals' serum concentrations was also detected ($r = 0.335$; $p < 0.001$) supporting the importance of good quality colostrum for passive transfer of immunity.