

Performance evaluation of a formulated infant food on some biological indices in Wistar rats

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Abstract. Performance evaluation of a formulated infant food on some biological indices in Wistar rats was investigated. For rats fed separately with normal rat feed, formulated infant food and proprietary food, serum total protein and albumin were determined by colorimetric method, red blood cell (RBC) and differential white blood cell (WBC) counts were determined with a haemocytometer, packed cell volume (PCV) was by micro-haematocrit, haemoglobin (HGB) was determined using cyanomethaemoglobin method while mean cell volume (MCV) and mean cell haemoglobin (MCH) were calculated. The results obtained showed that, for Wistar rats fed with normal rat feed, the baseline values prior to the commencement of feeding trial for serum total protein, albumin, body weight, PCV, WBC, platelet count (PLT), RBC, HGB, lymphocyte count (LYM), MCH, MCV, neutrophil (NEU), and eosinophil (EOS) were 82.9 g/dL, 44.75 g/dL, 142.80g, 41.14%, $7.60 \times 10^3 \mu\text{L}^{-1}$, $404.85 \times 10^3 \mu\text{L}^{-1}$, $5.68 \times 10^6 \mu\text{L}^{-1}$, 10.80 g/dL, 50.28 %, 18.42 pg, 59.28 fL, 45.57 %, and 2.57 % respectively. After the feeding trial, the serum total protein, albumin, body weight, PCV, WBC, PLT, RBC, HGB, LYM, MCH, MCV, NEU, and EOS in Wistar rats fed with the formulated infant food (the experimental group) were 79.6 g/dL, 50.65 g/dL, 169.18g, 40.14%, $5.77 \times 10^3 \mu\text{L}^{-1}$, $309.85 \times 10^3 \mu\text{L}^{-1}$, $6.85 \times 10^6 \mu\text{L}^{-1}$, 12.45 g/dL, 52.85 %, 18.24 pg, 58.64 fL, 42.00 %, and 2.14% respectively and these were in most cases, either greater or comparable with their corresponding mean values of 69.1 g/dL, 44.40 g/dL, 177.97 g, 30.24%, $4.18 \times 10^3 \mu\text{L}^{-1}$, $188.14 \times 10^3 \mu\text{L}^{-1}$, $5.29 \times 10^6 \mu\text{L}^{-1}$, 10.74 g/dL, 53.14 %, 20.37 pg, 57.61 fL, 38.85 %, and 4.57 % respectively in Wistar rats fed with the proprietary infant formula (the control group). This shows that the potential infant food has a more positive effect on most of the biological indices assessed than the proprietary infant food or a comparable effect at the least.

Keywords: formulated infant food, Wistar rats, biological indices, infant.

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