

## **PB-05 LIFE-SAVING FROM LETHAL MALARIA BY PRIMAQUINE TREATMENT IN AVIAN MODEL**

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**Introduction:** This research aimed to study the effects of an anti-malarial drug (primaquine) on the lethal strain malaria treatment with an avian model.

**Methods:** This study was conducted in male layer chickens one-day-old. Ten chickens were housed in a standard animal laboratory and divided into two groups (treatment and positive control). Each animal was inoculated with a lethal strain of malaria (*Plasmodium gallinaceum*) to for 106 infected-red blood cells by jugular vein injection. The treatment of 10 mg/kg primaquine was provided for the treatment group daily at day 4 postinfection (PI) for seven consecutive days. Parasitemia between the two groups was recorded daily using Giemsa-stained thin blood smears.

**Results:** Positive results for the parasite were found at day 2 PI onward. The parasitemia levels of the experimental and control groups at D2, D3, and D4 PI were (0.75+0.37):(0.74+0.63), (3.51+0.88):(2.8+1.82) , (13.12+3.57):(14.52+3.27) percent, respectively, without significant differences between groups. However, on days 2 and 3 posttreatment (PT), the parasitemia levels of the control group were 71.6+20.27, 88.9+6.80 percent while among the drug receiving group were 61.7+6.84, 48.7+4.78 percents, respectively significantly lower than those of the control group ( $p < 0.001$ ). In all, four chickens (4/5: 80%) within the positive control group died on day 6 PI, and one died on day16 PI. All chickens of the treatment group survived to the study end on day15 PT, but very low levels of blood stage malaria were found within some chickens.

**Conclusion:** The 10 mg/kg of primaquine treatment for seven consecutive days saved the lives of infected chickens from lethal malarial parasite. The blood stage malaria parasite was found in this primaquine treatment. Thus, the experiment posited that a higher dose of primaquine maybe needed to reach complete curative efficacy.

**Keywords:** *Plasmodium gallinaceum*, primaquine, treatment, malaria