



EPIDEMIOLOGICAL AND LESIONAL ASPECTS OF AN AVIAN LEUKOSIS OUTBREAK (HOUSEHOLD SYSTEM)

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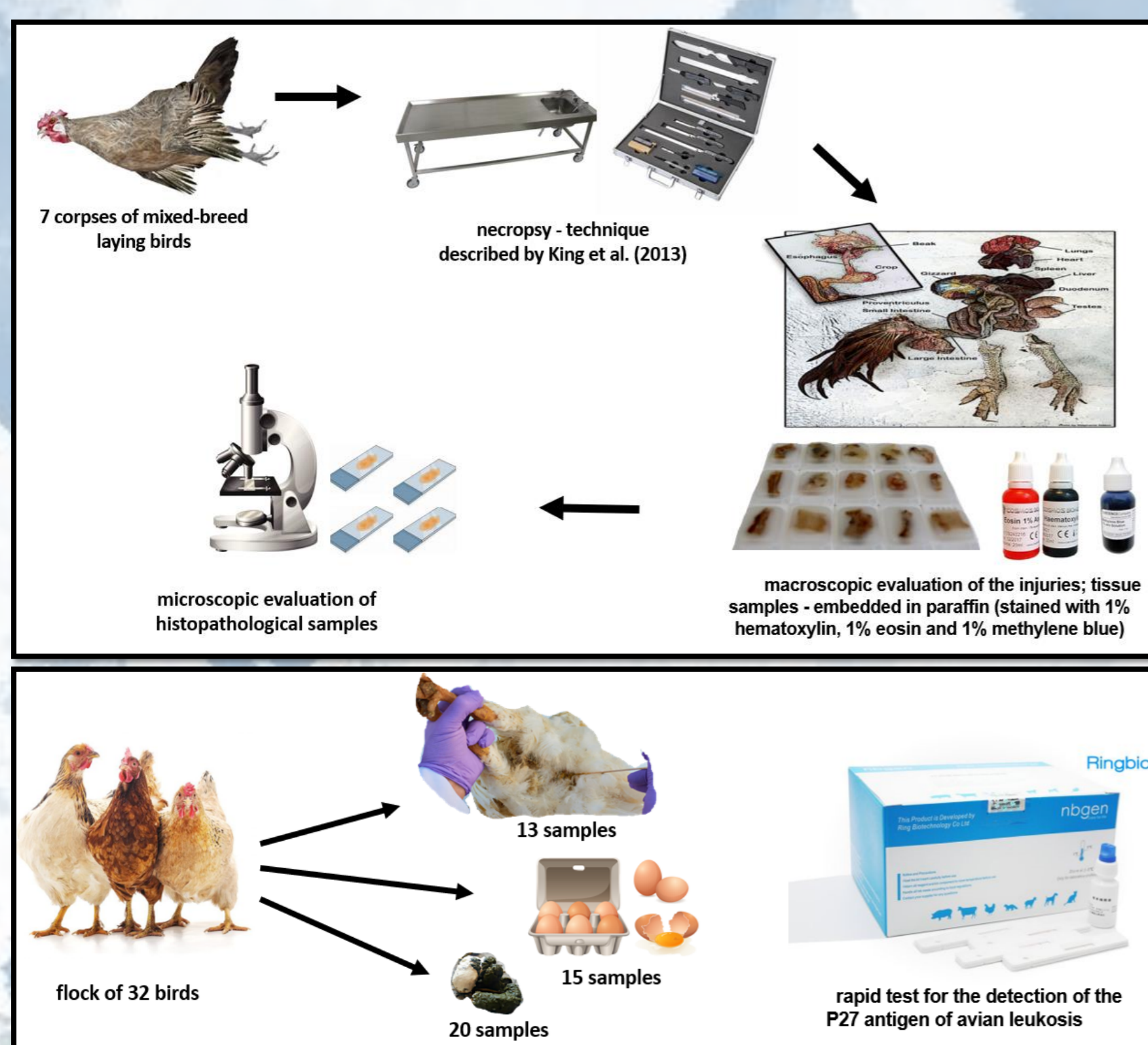
Abstract: Avian leukosis virus (ALV) can lead to lymphoid leukosis in various organs of domestic birds. An effective diagnostic method for field practice is one involving rapid tests. The study started from the identification of neoplastic lesions in 7 cadavers of laying birds, which came from a family household (Caras-Severin County). Leukosis was suspected, according to what was observed macroscopically and taking into account that the age of the birds was over 1 year. Most importantly, a lymphoblastic monomorphism was microscopically noted in several organs. To identify the disease in the poultry group, an Avian Leukosis P27 Antigen Rapid Test Kit (Ringbio) was used. Thus, 15 egg samples, 20 fecal samples and 13 samples obtained by cloacal swabbing, were analyzed from 32 birds. The mortality in the poultry flock was 17.94%. As for vertical transmission, out of the 15 egg samples tested, 4 were positive (26.66%). In terms of horizontal transmission, 2 faecal samples (10%) and 4 cloacal swab samples (30.76%) were positive. The spleen and the liver were the most affected and this was noted in all cadavers. Cardiac localization was the least common, being observed in only one hen out of seven. The data presented in this study update the epidemiological aspects of the disease and highlight the importance of using rapid tests in veterinary practice.

• Introduction

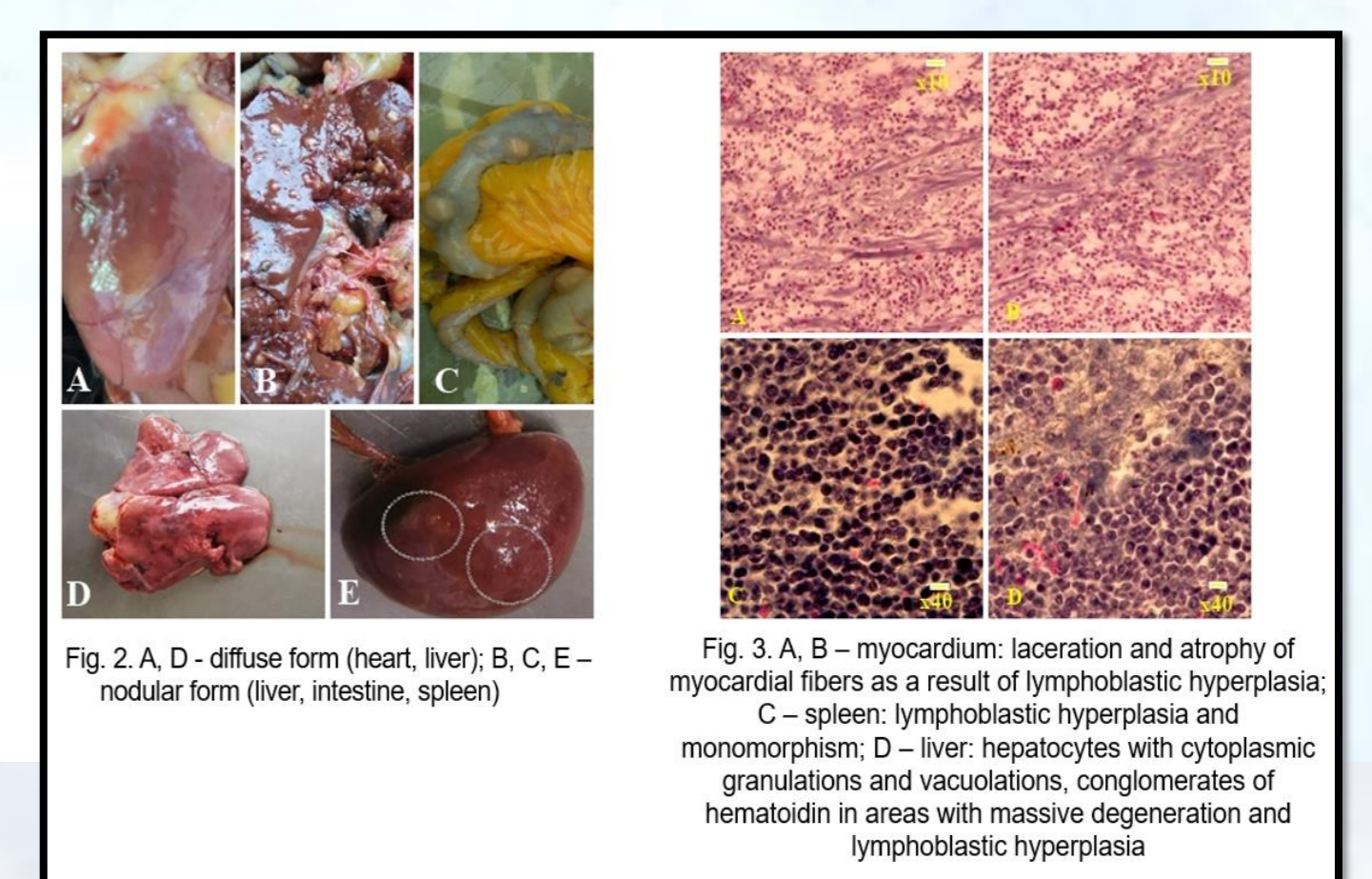
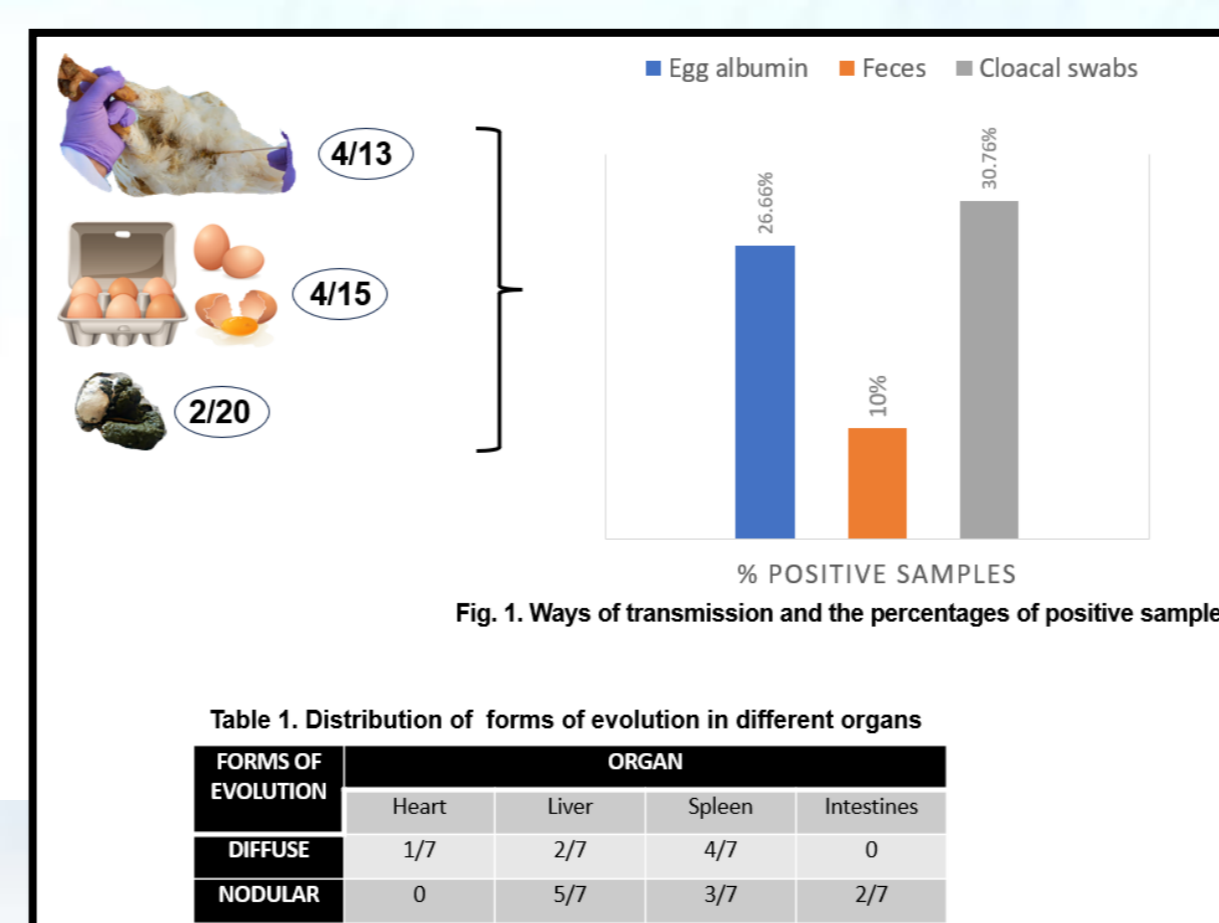
Avian leukosis is a viral disease found quite frequently in birds raised in extensive system and very rarely present in those in the intensive system (Feng et al., 2017). Avian leukosis virus (ALV) is included in the family *Retroviridae*, genus *Alpharetrovirus*, six subgroups being commonly reported in current veterinary practice (A-E and J) (Payne et Fady, 1997; Witter et Schat, 2003). Among the structural viral polypeptides, p27 is the most frequently included in rapid diagnostic tests (Fady, 2000). ALV can be transmitted in two ways.

Most of the time, congenitally infected chicks are not able to produce a sufficient amount of antibodies to neutralize the virus, thus remaining viremic throughout their life. Also, chicks infected early, horizontally, will have a low tolerance and may also be viremic for long periods of time (Swayne et al., 2020). Starting from these knowledge and knowing that the disease is kept well under control in intensive growth systems, but the current situation in extensive systems is not well known, we decided through this study the following: to update the perception regarding the evolutionary forms and the major organs affected; to identify the dominant way of transmission of the disease and to estimate the number of positive individuals from a leukosis outbreak.

• Material and method



• Results and discussions



Additionally, Sagarika et al. (2017) identified the nodular form at the level of the proventriculus, ovary, kidneys or lungs. In meat birds, the muscle localization was also reported (Furukawa et al., 2014).

In Germany, Freick et al. (2022) investigated the prevalence of avian leukosis in purebred chickens from 50 flocks, by taking cloacal swabs. The samples were processed by the ELISA and PCR methods.

The general prevalence of the disease among flocks was 28.7%, (28 flocks of birds out of 50). Large breeds of birds had the highest prevalence, 29.6%. Eradication of the disease requires periodic testing of chickens through cloacal smears, taking albumin samples from eggs, followed by the liquidation of the positive birds from the flock in order to permanently stop vertical transmission (Payne, 1998). These measures are frequently taken in intensive rearing systems and it would be good to implement them also in population households. Currently, the biosecurity in the extensive systems is minimal, and the risk of the virus spreading to other birds in the outbreak area or even to wild birds is very high (Ayala et al., 2020; Freick et al., 2022; Pohjola et al., 2015; Smith et al., 2018).

• Conclusions

Prevention and control of avian leukosis require monitoring and permanent elimination of infected birds. Vertical transmission must be identified and stopped in order to eliminate the disease. This was highlighted in the present study in a proportion of 26.66%, indicating a major risk of spreading the disease in the described flock, but also in neighboring households. Thus, even in extensive breeding, owners can purchase rapid tests to know the exact situation of the flock.