

PATHOLOGICAL INVESTIGATION ON FOWL ADENO VIRUS INFECTION IN MIDDLE EAST AREA 2019-2021

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Introduction

Fowl adenoviruses (FAdV), members of the genus *Aviadenovirus*, are important infectious pathogens associated with inclusion body hepatitis, hydropericardium hepatitis syndrome (HHS) and gizzard erosion in chickens and other birds, leading to substantial economic losses for the poultry industry worldwide [1,2]. Recently, high mortality associated with FAdV clinical signs was noticed in the Middle East [3,4]. Therefore, it was notable to perform a survey on the presence of FAdV in the area during the period 2019- 2021.

Materials and Methods

Samples were taken from broiler, breeders and layers from different countries in the Middle East (Jordan/Syria/Lebanon/ Iraq/UAE/Qatar/ Kuwait/SA/Yemen): 695 samples were analyzed using ELISA-BioChek and 173 samples were taken from liver/trachea/feather/spleen for qPCR- Kylt and Kogene analysis..

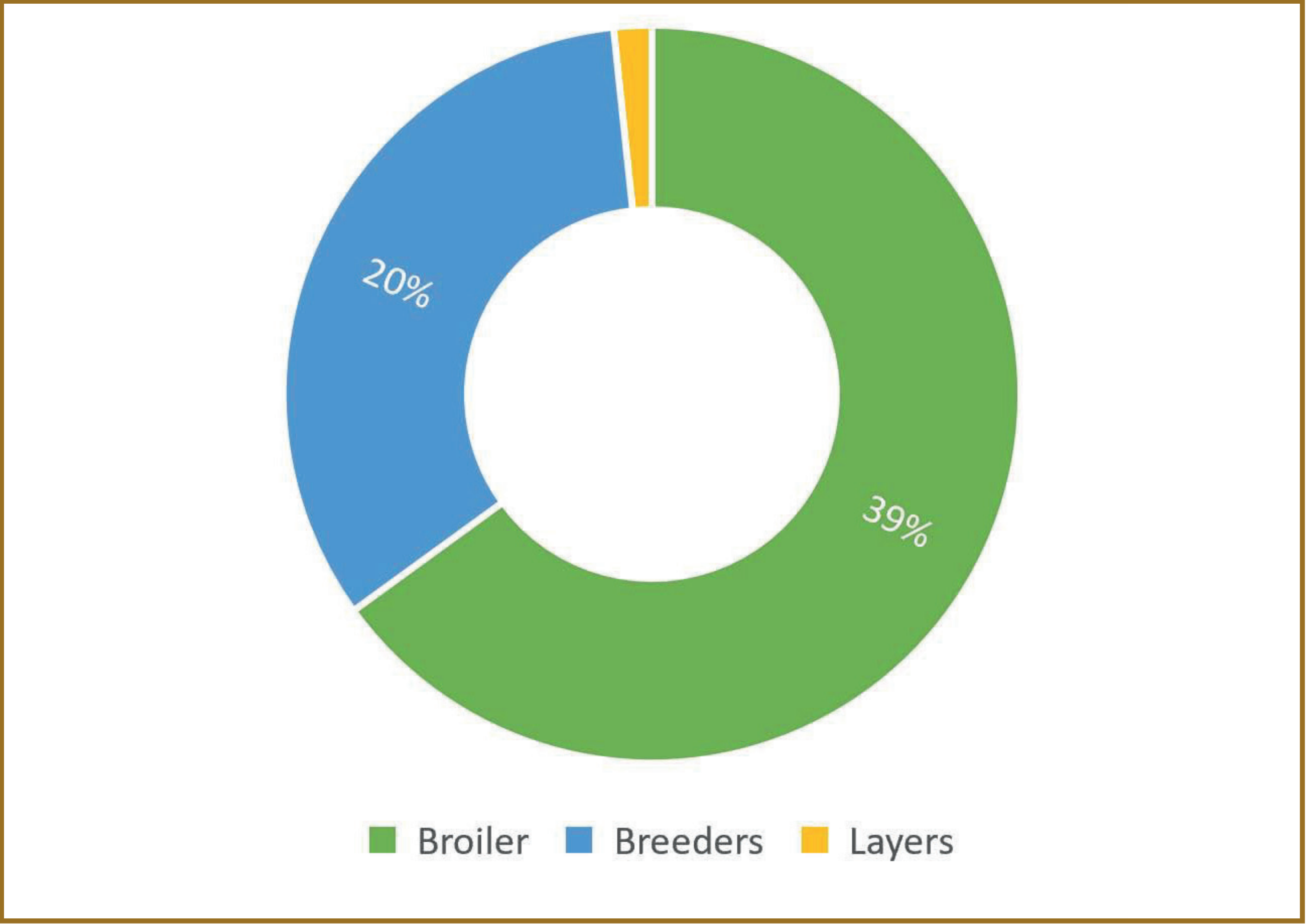
Results and Discussion

The positive ELISA percentage results were as the followings: broiler 39%, breeders 20%, while layers 1% as seen in graph 1. While for the qPCR results 89% of samples showed positive results, majority were from broiler, 34% of the latter positive results showed low Ct values. Therefore, they were sent to a specialized institute for phylogenetic typing. 32% of samples with low Ct values were able to give positive phylogenetic typing results and the following serotypes were able to be identified [59% FAdV-E, serotype 8b, 35% FAdV-D, serotype11, 6% FAdV-C-serotype 4] as seen in graph 2. Graph 3 shows the sequence result for the major serotype identified. Figure 2 shows the distribution of the above serotypes in the Middle East. These results were confirmed with the clinical signs as seen in figure 1.

Conclusion

Different serotypes are circulating in the Middle East area causing economic losses in poultry industry. In this case, to reduce the challenge, we have to use autogenous vaccine according to the strain existing in the region, as no sufficient cross protection is found between the different serotypes.

Graph 1: FAdV ELISA positive %



Graph 2: FAdV Serotypes %

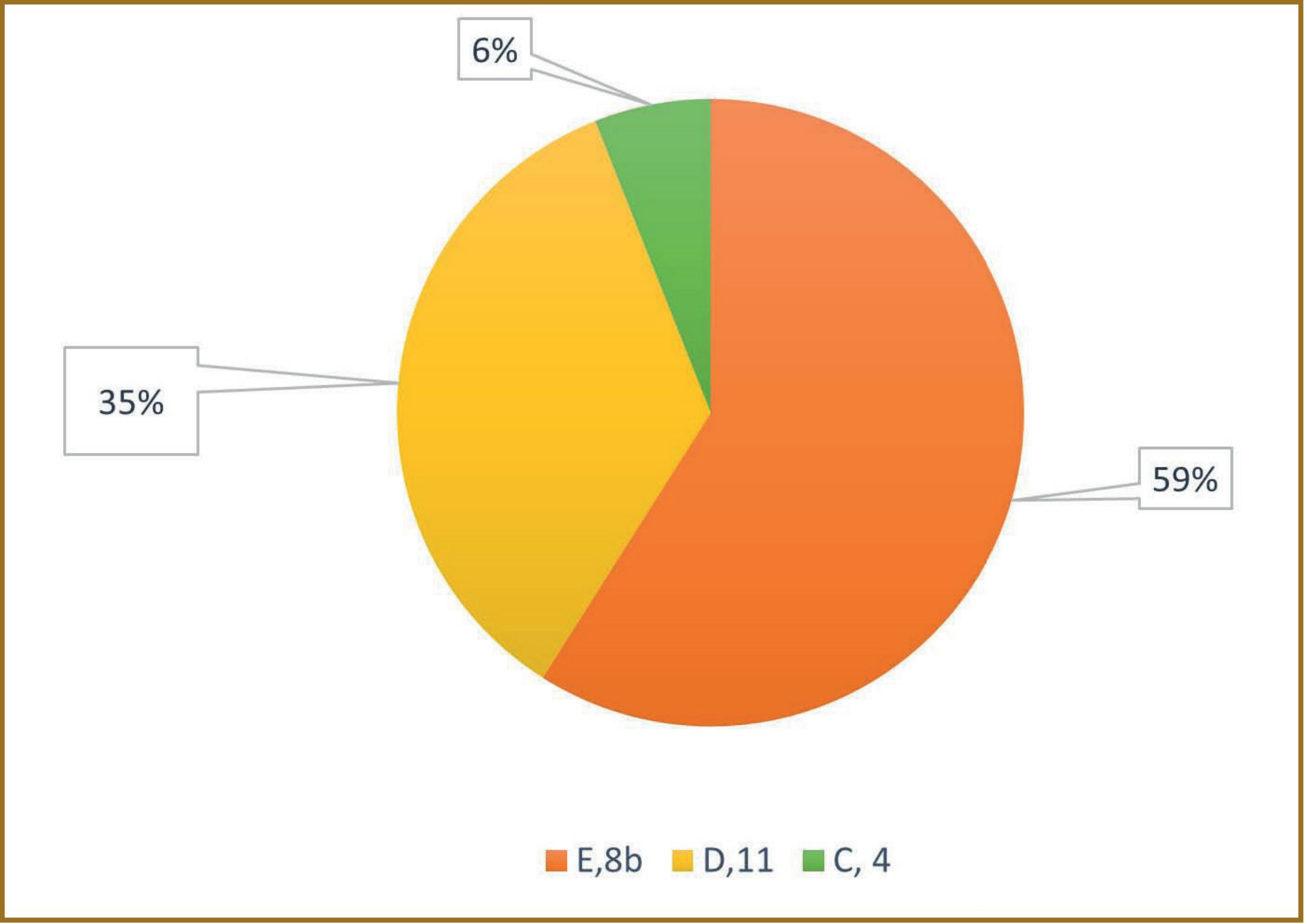
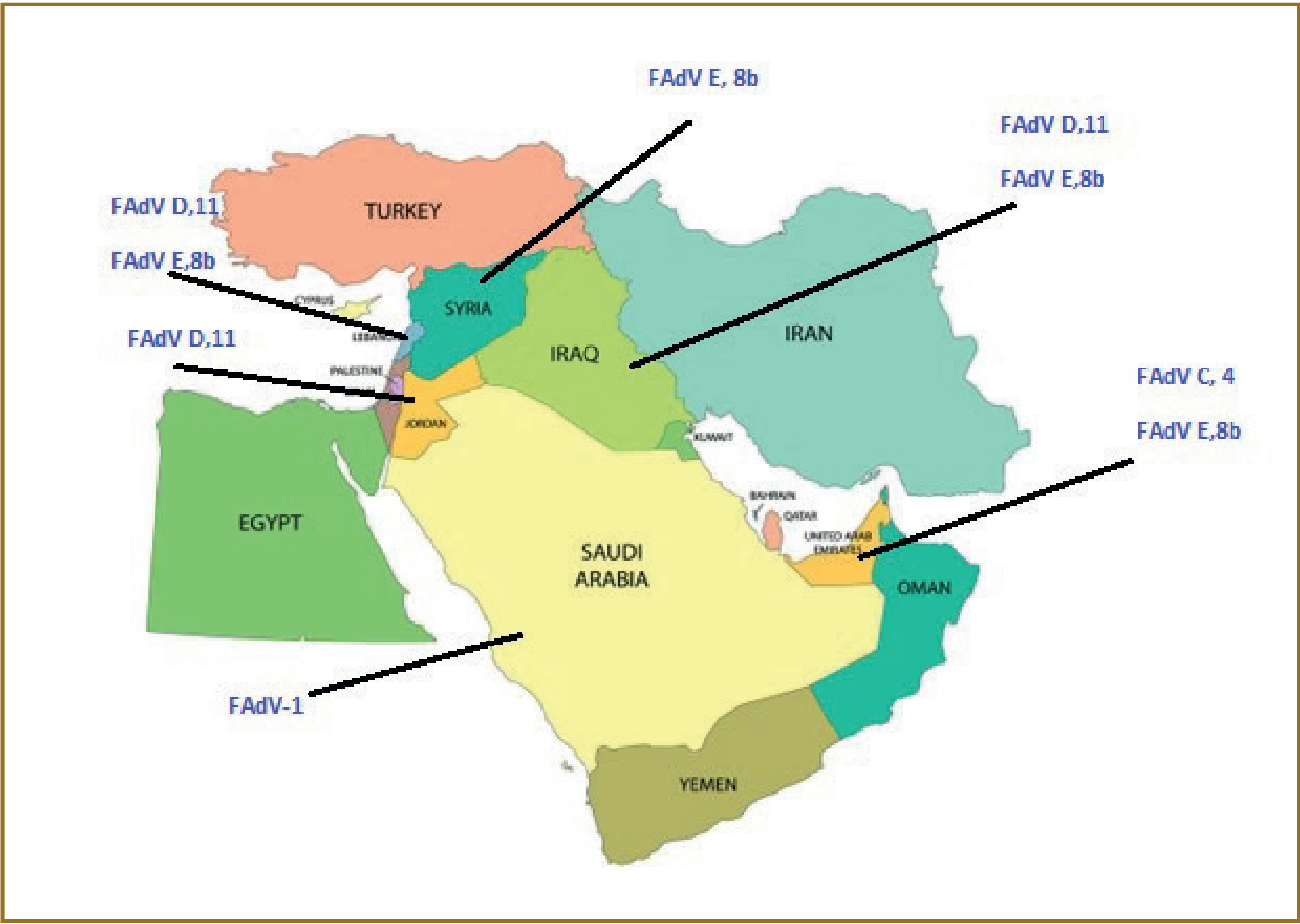


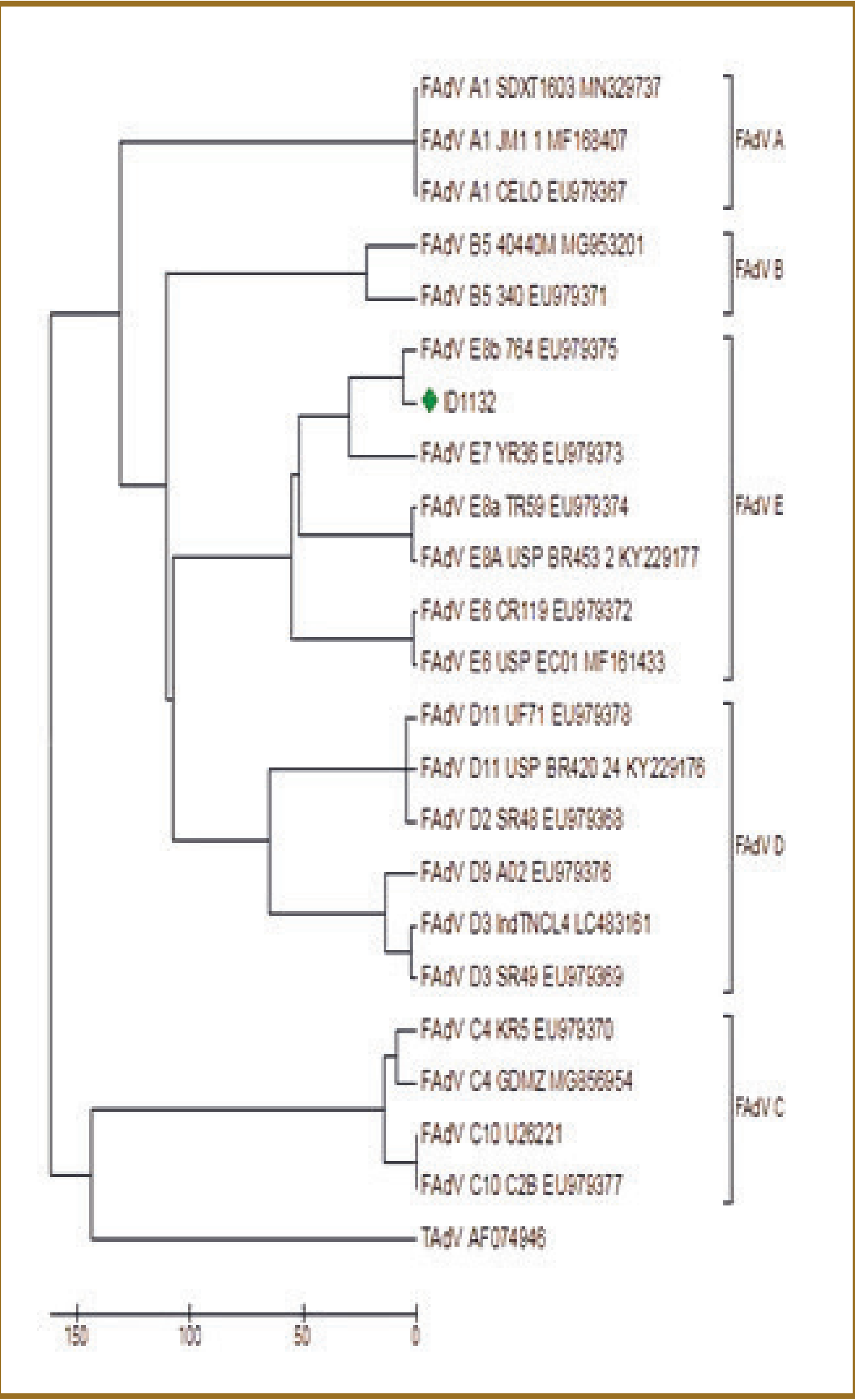
Figure 1: Clinical Signs



Figure 2: FAdV serotypes distribution in the Middle East



Graph 3: Sequence results of FAdV, serotype 8b



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