not planned [1]. Poisoning events (either acute or chronic; accidental or intentional) affect the health of every species, compromising the life of an intoxicated individual and the stability of a population. Direct exposure to some these substances (as diclofenac) may lead to the sudden death of the affected animals (as birds of prey). Recovery centres, researchers, veterinary professionals, and authorities must be permanently aware of this health concern [2].
Objectives: The aim of this review is to provide information regarding poisoning events of wildlife species in Portugal and highlight its importance in a health and nature conservation perspective. **Methods:** Different search tools (Science Direct®, Scopus® and Google Scholar®) were used to perform this review with the keywords: intoxication; toxic; toxicant; xenobiotic; poison; poisoning; wild; wildlife; fauna; Portugal. The search was also done in Portuguese to include reports in this language. Articles unrelated to the subject or regarding other countries were excluded. **Results:** Poisoning has been reported as cause of admission and death in Portuguese rescue centres in both mammals and birds [3,4]. Strychnine, insecticides, anticoagulants rodenticides, molluscicides, heavy metals have all been reported in wildlife poisoning events in Portugal. Clinical cases of accidental and intentional poisoning have been reported in carnivorous mammals and birds of prey (4,5). Iberian wolfs, Iberian lynxes, red foxes, vultures, kites, eagles and rooks are among the most frequently reported species. Stomach contents, blood, urine, liver and kidneys are the most used samples to detect these substances and perform the forensic diagnosis [1,5]. **Conclusions:** Poisoning may represent a threat to some Portuguese fauna, since some of the affected species are endangered and essential to the ecosystem stability. New regulations, monitoring programs and better resources are crucial to quickly intervene in suspicious cases in rehabilitation centres; and minimize the impact of this threat to wild species.

Keywords: xenobiotic; poisoning; wildlife; health; Portugal.

References:

[1] Grilo A, Moreira A, Carrapiço B, Belas A, São Braz B. Epidemiological Study of Pesticide Poisoning in Domestic Animals and Wildlife in Portugal: 2014-2020. Front Vet Sci.14;7:616293, 2021

[2] Kendall RJ, Nickson TE, Cobb GP, Cox SB. Wildlife toxicology: Emerging contaminant and biodiversity issues. CRC Press: Boca Ranton, 2016.

[3] Garcês A, Soeiro V, Lóio S, Sargo R, Sousa L, Silva F, Pires I. Outcomes, Mortality Causes, and Pathological Findings in European Hedgehogs (Erinaceus europeus, Linnaeus 1758): A Seventeen Year Retrospective Analysis in the North of Portugal. Animals, 30;10(8), 2020.

[4] Loureiro, M.A.K.P. Contribuição para o estudo da fuinha (Martes foina): aspetos ecológicos, morfológicos e toxicológicos de 40 indivíduos provenientes do Centro de Ecologia, Recuperação e Vigilância de Animais Selvagens (CERVAS). Universidade de Lisboa, Faculdade de Medicina Veterinária, Lisboa.

[5] Carneiro MA, Oliveira PA, Brandão R, Francisco ON, Velarde R, Lavín S, Colaço B. Lead Poisoning Due to Lead-Pellet Ingestion in Griffon Vultures (Gyps fulvus) from the Iberian Peninsula. J Avian Med Surg. 30(3):274-27, 2016.

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POSTER 17

Sublethal ecotoxicity assays of an emergent psychoactive substance in *Daphnia magna*

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Resumo

Introduction: Illicit synthetic cathinones (SCAT) are an emergent group of psychoactive substances (PAS) due to their recreational purposes and easy access. After consumption, PAS are released in sewage systems via urine excretion and reach wastewater treatment plants, which do not remove completely these substances.

Consequently, PAS are frequent detected in effluents and aquatic ecosystems, being considered environmental contaminants [1]. Indeed, due to their high consumption and continued excretion, PAS are classified as pseudo-persistent and present potential short- and long-term risks for aquatic organisms and humans [2]. SCAT are chiral drugs and enantiomers usually exhibit enantioselectivity in many aspects including toxicity [1-3]. Furthermore, PAS are designed to change nervous system function, posing unpredictable adverse effects against non-target organisms. Considering the scarce information available on SCAT ecotoxicity, including methylenedioxypyrovalerone (MDPV), it is urgent to assess their different toxic effects and enantioselectivity on exposed aquatic organisms. **Objectives:** The main goal of this study is to assess MDPV ecotoxicity in the microcrustacean Daphnia magna exposed to sublethal concentrations for 9 days. **Materials and Methods:** An ecotoxicity assay using daphniids was carried out at 0.1, 1 and 10 µg/L of racemate MDPV to evaluate lethality, as well as reproductive, biochemical, morphophysiological and behavioral effects. For that, neonates with less than 24 hours were used for experiments. Each experimental unit consisted of a batch of 20 daphnids randomly divided for 5 replicates per test concentration and control. **Results:** Preliminary data showed no significant changes on reproductive parameters as number of daphnia with eggs, number of eggs per daphnia and number of neonates, compared to the control. A slight increase in mortality was observed in the higher tested concentration compared to the control. **Conclusions:** The present study showed low toxic potential of MDPV at sublethal concentrations range, namely in reproductive/mortality endpoints in D. magna. Further studies are ongoing to improve the scarce knowledge about MDPV and possible enantioselective toxicity effects on this non-target aquatic organism.

Keywords: Illicit chiral drugs; synthetic cathinones; ecotoxicity; aquatic pollution; Daphnia magna.

References:

[1] Ribeiro ARL, Maia AS, Ribeiro C, Tiritan ME. Analysis of chiral drugs in environmental matrices: Current knowledge and trends in environmental, biodegradation and forensic fields. TrAC Trends Anal Chem 124: 115783, 2020.

[2] Pérez-Pereira A, Ribeiro C, Teles F, Gonçalves R, Gonçalves VMF, Pereira JÁ, Carrola JS, Pires C, Tiritan ME. Ketamine and norketamine: Enantioresolution and enantioselective aquatic ecotoxicity studies. Environ Toxicol Chem 41(3): 569-579, 2021.

[3] Pérez-Pereira A, Maia AS, Gonçalves VMF, Ribeiro C, Tiritan ME. Enantioselective monitoring of biodegradation of ketamine and its metabolite norketamine by liquid chromatography. Chemosensors 9(9): 242, 2021.

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POSTER 18
Síndrome do bebé sacudido

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Resumo

Introdução: A Síndrome do Bebé Sacudido (SBS) ocorre quando o bebé ou a criança de até 5 anos é bruscamente abanada, implicando um movimento de chicote cervical. Esta ação brusca de agitação pelos ombros ou extremidades, afeta a musculatura cervical pouco desenvolvida, podendo gerar lesões cerebrais características que normalmente não possuem sinais externos, como a hemorragia subdural (HSD), hemorragia subaracnoídea (HSA), hemorragia retiniana (HR), encefalopatia, além de fraturas ósseas. É considerada uma das formas de abuso infantil mais graves que apresenta alta morbidade e mortalidade [1,2,3]. **Objetivos:** Melhorar a compreensão e perceção da SBS, já que seu diagnóstico é difícil, em consequência de não apresentar sinais visíveis ou óbvios de abuso. **Métodos:** Para a realização do trabalho foi feita uma pesquisa na base de dados do PubMed utilizando o descritor "Shaken Baby Syndrome", publicados a partir de 2009 no idioma inglês e português. **Resultados:** SBS é uma forma comum de traumatismo craniano não acidental em bebés. Tendo um prognóstico muito ruim, com a taxa de mortalidade podendo chegar a 30% e em sobreviventes cerca de 70% vão apresentar sequelas a longo prazo [4].