Evaluation of oxidative stress indices of kidney tissue of *Epinephelus coioides* in the presence of benzoalphapyrene contaminant

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Abstract

The role of reactive oxygen species and their oxidative damage in many pathological processes have been identified. Benzo-α-Pyren is a high molecular weight multi-chain aromatic cyclic hydrocarbon compound with high carcinogenic effects. Therefore, the aim of this study was to investigate the effect of Benzo-α-Pyren on oxidative stress indices in renal tissue in common grouper. 25 *Epinephelus coioides* were transferred to 300liter water tanks for 7 days in five experimental groups including control group, sham group (12 µl of dimethyl sulfoxide solution) and Three treatment groups Benzo-α-Pyren with low concentration (0.5 µg / l), medium concentration (5). (1 µg / L) and high concentrations (5 µg / L) were injected into fish (2019). After 7 days, kidney tissue was extracted for antioxidant tests (2019). Malondialdehyde (MDA) and thiol levels were used to measure oxidative stress. The results were analyzed using one-way ANOVA and Tukey tests. Significance level was considered $P<0.05$. No significant difference was observed between malondialdehyde content and thiol concentration between control and Sham group in kidney tissue. There was a significant increase in the activity of renal MDA in fish exposed to 0.5, 1.5, 5 ng / l Benzo-α-Pyren compared to the control group ($P< 0.001$). On the other hand, the amount of thiol in these concentrations decreased significantly compared to the control group ($P < 0.001$). No significant difference was observed in the tissue of all fish of control and control groups of solvent malondialdehyde (MDA) and thiol levels. The values obtained in this study can be used as a criterion for assessing oxidative stress in the tissues of kidneyfish exposed to benzoalphapyrene as well as monitoring the environmental pollution of aquatic ecosystems.

Keywords: Oxidative stress, Kidney tissue, Epinephelus coioides, Benzo-α-Pyren.