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ORIGINAL ARTICLE

Determination of normal blood biochemistry (electrolytes and non-electrolytes) values in mature *Huso huso* in spring

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Abstract Knowledge of fish haematology can provide information supportive of a wide variety of uses. These studies have generally been used as an effective and sensitive index to monitor physiological and pathological changes in fish, especially in the management of endangered species such as *Huso huso*. In this study, 12 biochemical parameters in mature *H. huso* were measured. Serum samples of 40 *H. huso* (20 males and 20 females) were analysed, and their serum parameter values were determined as median (percentiles) in males and females, respectively: Na, 162.70 (160–164.75) and 141.10 (156–144.9 mmol/l); K, 3.2 (2.75–3.35) and 3.1 (2.75–3.85 mmol/l); Ca, 9.6 (7.8–11) and 9.7 (8.6–10.9 mg/dl); P, 14.7 (12.65–15.65) and 12.1 (11.25–13.95 mg/dl); glucose, 176 (124.5–234.5) and 173 (147.5–212 mg/dl); triglyceride, 770 (607.5–872) and 750 (664.5–842 mg/dl); bilirubin, 0.67 (0.575–0.825) and 0.61 (0.525–0.745 mg/dl); TOP, 3.2 (2.85–3.45) and 3.6 (3–3.8 g/dl); albumin, 1.4 (1.3–1.6) and 1.6 (1.2–1.85 g/dl); cholesterol, 286 (202–289.5) and 239 (202–308 mg/dl); creatinine, 0.13 (0.11–0.14) and 0.11 (0.9–0.15 mg/dl) and BUN, 15.2 (12.3–17.6) and 17.7 (15.7–19.55 mg/dl). The concentration of P was significantly higher ($P< 0.05$) in males than in females and levels of BUN and TOP in females was significantly higher ($P< 0.05$) than in male fish.

Keywords Blood · Electrolytes · *Huso huso* · Non-electrolyte

Abbreviations

BUN	Blood urea nitrogen
Ca	Calcium
K	Potassium
Na	Sodium
P	Phosphorus
TOP	Total protein

Introduction

Sturgeons are the living representatives of an ancient and isolated group of fish. They are believed to have descended from the fresh water palaeoniscids of the Devonian period independently of both the holosteans and the teleosts. They are euryhaline, breeding in freshwater but spending most of their lives at sea (Potts and Rudy 1972). Sturgeons are important commercial fish and the Caspian Sea is home to the world's largest population (Shahsavani et al. 2010b). All sturgeon species worldwide are covered under the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Fauna. *Huso huso* is one sturgeon that has become an endangered species due to a combination of excessive fishing and anthropogenic/agricultural water

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