THE FIRST COMPARATIVE ANALYTIC PATENTS OF ELECTROPHORETIC VARIATIONS IN SERUM PROTEINS OF THE REARED CASPIAN SEA STURGEONS

Arash Chaichi Nosrati1*, Leila Modiri1

1Department of Microbiology, Faculty of Basic Sciences, Lahijan Branch, Islamic Azad University (IAU), Gilan, Lahijan, Iran

Corresponding authors: (Email: achn@iau-lahijan.ac.ir)

ABSTRACT

Hematology and serum biochemistry of blood are in values for the problem of biochemical variability of fishes during many changes and biochemical fluctuations. Electrophoretic heterogeneity of serum proteins was revealed in various groups of vertebrates including fish and currently it’s methods of proteins fractionation, including blood serum, have been widely employed for studying population variability in fish. These proteins are heterogeneous-polymorphic amongst the great majority of sturgeon fishes, which permits using this fraction as a marker in health and genetic studies. Blood samples-serum harvested in a test tube till biochemical variables to be determined using standard techniques and the samples prepared for durations upon Sebia agarose gel protein electrophoresis instructions, gels were stained using camerotins blue baths, then putted in oven chamber. Densiometers applied and electrophoretograms drawn using standard softwares so that analytical data to be conducted. Reference tabules reported here will be useful for the early detection, identification, and monitoring of health status, disease, adaptations and sublethal conditions in wild and cultured sturgeon. These reference ranges and findings will assist in the ongoing health management of critically endangered sturgeon species. Our data respond to interests in replenishing wild stocks with hatchery-reared fish which has created a great need for accurate hematological and biochemical reference intervals to evaluate the health of both fish raised in aquaculture systems and fish in the wild as compared to other animals, hens should be considered of the most important physiologic biochemical adaptations providing for the systems.

KEY WORDS: Hematologic Electrophoretic, Serum proteins

INTRODUCTION

Hematology and serum biochemistry of blood values are in values for the problem of biochemical variability of fishes during change of habitats in which occupies a special place among the current problems of ecological physiology and biochemistry (Clark S et al., 1979, Hunn JB et al., 1977, Llorente MT et al., 2001). The diverse physiological role of blood proteins is significant in differences were found between origin, sex and age of animals, so, of infection which had minimal significance on blood values (Kieffer J.D et al., 2001). Electrophoretic heterogeneity of serum proteins was revealed in various groups of vertebrates including fish, already in the first studies significant differences were found between Chondrichthes and Teleostei on the one hand and warm-blooded animals, on the other (Gershanovich AD et al., 1993, Luk'yanenko VI., 2002, Roche H et al., 1996, Slicher AM., 1961). Specifically, it seemed that the fractional composition of cesses intersect serum proteins in fish seems to be less heterogeneous and among many functionally specialized blood proteins incomplete as compared to that in higher vertebrates, for instance, an evolutionary ancient group Chondrichthyes lack albumines while certain groups of Teleostei lack globulins (Adams SM., 2002, Alyakrinskyay IO et al., 1984, Birstein VJ., 1993). Electrophoretic methods of fractionation of proteins, including blood serum, have been currently widely employed for studying population variability in fish (Palikova M et al., 1999, Ellis AE., 1977). These proteins are heterogeneous and polymorphic amongst the great majority of sturgeon fishes, which permits using this fraction as a marker in population and genetic studies. Thus obtaining correct data implies the electrophoretic conditions that would exclude artefacts, Exactly this feature of proteins may be responsible for the current discrepancy of views on their heterogeneity in Acipenseridae existing in the world. In addition, the blood content of total serum protein and albumins in fish was almost as less as in defined mammals (Bahmani M., 2001, Conzelmann P et al., 1997, Jenkins JA., 1993). These data served as grounds for the viewpoint of “simplified” protein composition in blood serum in fish.

MATERIALS AND METHODS

Blood samples for quantitation of serum proteins were taken, then transferred in test tubes. Blood clotting, serum was harvested in a test tube till biochemical variables to be determined using standard techniques, protein concentration
firstly determined and the samples prepared for durations upon Sebia agarose gel protein electrophoresis instructions. Perfect prepared gels were stained using comassi blue and decolorated by acetic acid baths, then dried and fixed in 55 centigrades oven chamber. Densitometrices applied and electro phoretograms drawn using standard Photo-Ep5softwares so that analytical data's to be conducted.

RESULTS AND DISCUSSION
In light of efforts to restore depleted populations and Genera or Species of sturgeons (Table-1), these data add to the physiological information needed for better understanding them specially Caspian sturgeons, and their hybrids. Moreover, the data are obtained from the focused species, and not a surrogate. Secondly, species determinations can be assisted by the study of cytochemicaly stained blood cells and DNA content more, too. Baseline normal values for differential blood protein counts and constituents can establish ranges of blood reference numbers that reflect average values for the either species. In our study, sampling blood over the course of six months and obtaining resultant differential protein profiles have begun to provide a basis for delineating the normal ranges of blood values for the target sturgeons. Because the data could be compared to both a third year of sampling season the range of the protein fractions in fish blood is quite wide, but this pattern types is usually not the predominant in peripheral circulation. The changes in this electrophoretograms type is a relatively rapid response in fish – within hours to mounths – and has appeared to be independent of environmental conditions. Data obtained from the blood of targeted sturgeons, and their related fishes from 12 months over two field seasons of sampling will provide a solid basis for assisting in delineating sturgeon health and assist with distinguishing between the species and their hybrids.

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<th>Table 5. Genera or Species of sturgeons</th>
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<tr>
<td><strong>Pre alb.</strong></td>
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<td>H.huso</td>
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<td>A.persicus</td>
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<td>A.gueldensstaedti</td>
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<td>A. nudiventris</td>
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<td>A.stellatus</td>
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CONCLUSIONS
A complete retrospective review and data analysis showed that there are a specific values of proteins concomitantly their compositions for the species reasonably. We consider to improve or establishment of the fractional composition of serum proteins in sturgeons as the most important physiologobiochemical idio adaptation and the corresponding amount of protein placed in conductions. The objective of this study was to generate status of hematologic and biochemistry reference intervals for out on healthy Caspian fishes sturgeon species could be comparative studies of the heterogeneity and polymorphism of the most important functionally specialized proteins and globulins, Since the fractional composition of globins proved to be identical during the periods of life for all main parameters (number of components, relative mobility, and protein content of each component). This puts the Caspian sturgeon in a special position with reference to teleostean fish, specifically sturgeons, in which the specific proteins of "slow" and "fast" globulins undergoes changes upon the habitats. A complete retrospective review and data analysis showed that there are a specific values of proteins concomitantly their compositions for the species reasonably. Reference values reported here will be useful for the early detection, identification, and monitoring of health status, disease and sublethal conditions in wild and cultured sturgeon. These reference ranges and findings will assist in the ongoing health management of critically endangered sturgeon species. Our datas respond to interests in replenishing wild stocks with hatchery-reared fish which has created a great need for accurate hematologic and biochemical reference intervals to evaluate the health of both fish raised in aquaculture systems and fish in the wild as compared to other animals, hens should be considered of the most important physiologo biochemical adaptations providing for the normal functioning of...
physiological systems rather than as evidence of its imperfection reflecting the alleged “primitiveness” of this prospering aquatic vertebrates.

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REFERENCES


