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CLINICAL BLOOD VALUES OF THE NORTHERN FUR SEAL, *Callorhinus ursinus*. III. COMPARISON OF EYE FLUID AND SERUM VALUES [1]

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Abstract: The levels of 13 components in the serum and eye fluids of the northern fur seal, *Callorhinus ursinus*, are compared. The wide variations observed would appear to limit the usefulness of eye fluid values as a substitute for serum values.

INTRODUCTION

Previous papers[1,2] in this series have presented and discussed values for 14 components in the serum of the northern fur seal, *Callorhinus ursinus*. Eye fluid has been suggested as a possible alternative source of material for clinical analysis when serum may be difficult or impossible to obtain as, for example, in working with dead animals. A recent field trip to the Pribilof Islands, Alaska, gave us the opportunity to collect and

TABLE 1. Comparison of serum and eye fluid clinical values in the northern fur seal, *Callorhinus ursinus*.

	Seal P-1A			Seal P-1K		
		Eye fluid			Eye fluid	
Component	Serum	#1	#2	Serum	#1	#2
Total protein, g/dl	7.0	0.7	1.4	6.4	0.8	1.2
Calcium, mg/dl	11.2	—	—	10.7	7.7	7.6
BUN, mg/dl	24.8	—	—	24.5	24.0	24.0
Cholesterol, mg/dl	174.0	—	—	189.0	6.0	7.0
Globulins, g/dl	2.9	0.3	0.0	3.5	0.5	0.7
Inorganic phosphorus, mg/dl	7.5	1.1	2.4	5.7	1.9	2.2
Glucose, mg/dl	68.0	—	—	121.0	90.0	89.0
Uric acid, mg/dl	4.7	5.9	5.2	3.5	4.9	—
Creatinine, mg/dl	1.0	—	—	1.2	0.6	0.7
Alkaline phosphatase, mU/ml	197.0	N.D.[1]	N.D.	99.0	—	N.D.
SGPT, mU/ml	13.0	N.D.	N.D.	23.0	N.D.	N.D.
SGOT, mU/ml	73.0	51.0	37.0	102.0	18.0	31.0
LDH, mU/ml	997.0	335.0	265.0	1049.0	225.0	312.0

[1]N.D. = none detected

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compare matched eye fluids and serum from two fur seals. This short communication summarizes the resulting data and discusses their significance.

MATERIALS AND METHODS

The sera and eye fluids from two bachelor bulls were collected during the fur seal harvest on St. Paul Island, Alaska, in July, 1975. The procedures used in the collection and analysis of the serum samples have been described.[1,2] The eye fluids were collected by hypodermic syringe shortly after death. Flocculent material which appeared after a few hours of refrigerated storage was removed by centrifugation prior to analysis. Analyses were performed using the same procedures and equipment as for the serum samples.

RESULTS AND DISCUSSION

The data are summarized in the Table. Only blood urea nitrogen (BUN) and, to some extent, uric acid have similar serum and eye fluid levels. The rest of the data indicate the lack of correspondence between eye fluid and serum levels. It is evident that systematic use of eye fluid analysis would only be possible after the accumulation of a separate body of eye fluid data. Furthermore, with many components, substantial differences exist even between individual eye fluids from the same animal. Such is the case with total protein, globulins, phosphorus and the enzymes lactic dehydrogenase (LDH) and serum glutamate oxalacetate transaminase (SGOT). We conclude that eye fluid analysis is of limited usefulness within the present context of supplementing serum analysis.

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