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Prosaposin A as a Potential Biomarker in Patients of Squamous Cell Carcinoma of Head and Neck

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Introduction

- Head and Neck Squamous cell Carcinoma (HNSCC) is one of the leading causes of cancer as well as cancer related deaths[1].
- Most patients present in a locally advanced state which lead to significant morbidity and mortality[2].
- A biomarker for HNSCC has potential for earlier detection and better treatment of cases but it's search has been elusive so far[3].
- In a previous analysis by investigators[4] as well as at our centre, the levels of Prosaposin A (PSAP) were found to be elevated in the serum of HNSCC patients when compared to age and sex matched healthy controls.

Methodology

- Serum of biopsy proven HNSCC patients (n=91) were obtained before and after their treatment.
- Patients treated with both radical and palliative intent were included.
- Serum samples of a cohort of age and sex matched healthy volunteers (n=42) were also obtained. An ELISA assay was run to measure the PSAP levels in serum in ng/ml .
- A Wilcoxson matched pairs signed rank analysis was run to evaluate ELISA values pre- and post-treatment.
- P value <0.05 was considered to be significant

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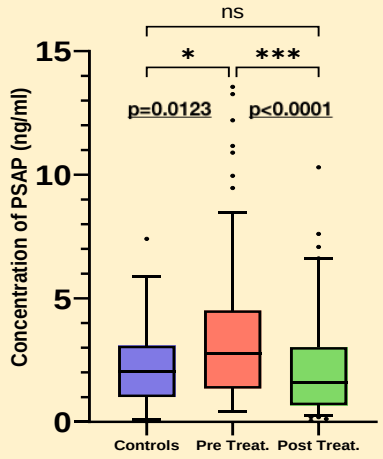
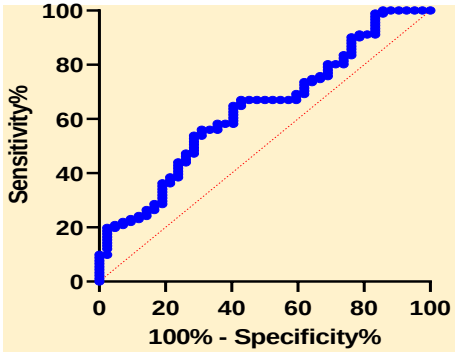
Results

Study population (n=91)	Median and IQR
Age (years)	59 (50-64)
Weight (kg)	57 (47.5-66.5)
Height (cm)	165 (158-172)
Kernofsky Performance Score	80 (50-90)
EQD2 of RT received (Gy)	62 (51-66)
Male/Female	80/11

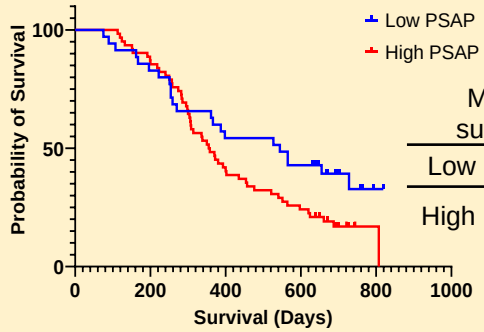
Histology	***Well Diff.***	***Mod. Diff.***	***Poorly Diff.***	***NOS***
	5	59	11	16
Primary	***Oral cavity***	***Oropharynx***	***Larynx***	***Hypopharynx***
	14	61	6	10
Overall Stage (TNM)	***Stage 1***	***Stage 2***	***Stage 3***	***Stage 4A/B***
	0	9	17	65
T stage	***T1***	***T2***	***T3***	***T4A/B***
	4	25	19	44
N stage	***N0***	***N1***	***N2***	***N3***
	28	16	28	19



PSAP (ng/ml)	Control	Pre Treat.	Post Treat.
Median	2.05	2.76	1.61
IQR	1.00-3.08	1.35-4.50	0.68-3.03



AUC = 0.63
(95%CI 0.54-0.73)
P=0.0127



Median survival	Days	P value
Low PSAP	544	0.05
High PSAP	356.5	

Conclusion

- Serum PSAP levels were significantly elevated in HNSCC patients at baseline compared to healthy controls which decreased post treatment.
- We hereby propose serum PSAP as a possible prognostic biomarker in HNSCC patients.
- Further large-scale clinical studies are warranted to establish serum PSAP as a diagnostic/prognostic marker in HNSCC patients

No conflicts of interest of any of the authors.

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