Barts Cancer Institute
Queen Mary, University of London

Barts and The London School of Medicine and Dentistry

Diagnostic and prognostic biomarkers for duodenal adenocarcinoma (DA) patients

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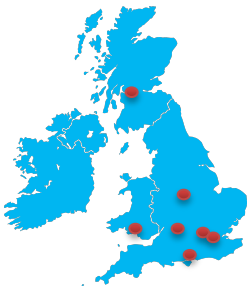
1. UK Duodenal Cancer Study Group (UKDCSG)

Barts Health NHS Trust – London (26)

Royal Free Hospital NHS Foundation Trust – London (20)

Oxford University Hospital NHS Foundation Trust (21)

University Hospital Southampton NHS Foundation Trust (24)



Abertawe Bro Morgannwg University Health Board – Swansea (17)

University Hospitals of Leicester NHS Trust (30)

NHS Greater Glasgow and Clyde - Royal Infirmary (42)

2. Patient and Tumour Characteristics

Study Years : 2005 – 2015.

n=180; All resected Primary Duodenal Adenocarcinomas

Median age - 68 years old (IQR 61 - 74)

57% Male.

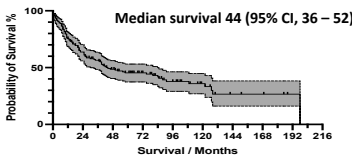
Adjuvant Therapy (n=65).

Median Follow-up – 27 months (IQR 11- 68).

No prognostic clinic-pathologic characteristic on Multivariate analysis (Cox proportional hazard)

Histological Characteristics	n=180 (percentage)
TNM stage	
I	17 (9.4%)
IIa	29 (16.1%)
IIb	26 (14.4%)
IIIa	60 (33.3%)
IIIb	29 (16.1%)
IV	6 (3.3%)
Unknown	13 (7.2%)
Differentiation Grade	
Well	15 (8.3%)
Moderate	98 (54.5%)
Poor	53 (29.5%)
Unknown	14 (7.7%)
Positive resection margin	120 (66.7%)
R0	41 (22.8%)
R1	19 (10.5%)
Rx	
Lymphovascular invasion	60 (33.3%)
Positive	96 (53.3%)
Negative	24 (13.4%)
Unknown	
Perineural invasion	
Positive	54 (30%)
Negative	102 (56.6%)
Unknown	24 (13.4%)
Lymph Node Metastases	
Positive	87 (48.3%)
Negative	71 (39.4%)
Unknown	22 (12.3%)

3. Kaplan Meir of Overall Survival for UKDCSG



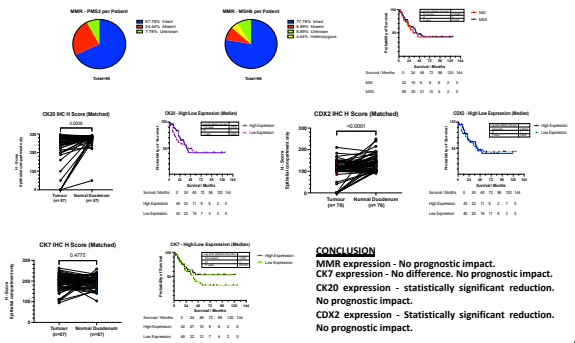
No. at Risk

Time / Months	0	24	48	72	96	120	144	168	192	216
No. at Risk	180	100	66	43	26	15	7	5	2	0

4. Methodology

UKDCSG (7 Centres) contributed clinico-pathological data and complimentary Formalin-fixed-paraffin-embedded samples for Immunohistochemistry (IHC) and Immunofluorescence (IF) assays for potential diagnostic and prognostic biomarker and immune cell densities in Duodenal adenocarcinoma (DA).

5. Diagnostic IHC Biomarkers : MMR/CK7/CK20/CDX2

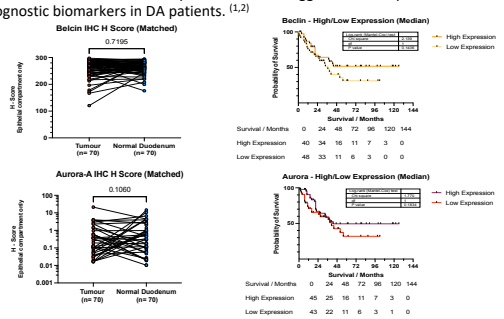


CONCLUSION

MMR expression - No prognostic impact.
CK7 expression - No difference. No prognostic impact.
CK20 expression - statistically significant reduction. No prognostic impact.
CDX2 expression - Statistically significant reduction. No prognostic impact.

6. Prognostic IHC Biomarkers : Beclin-1 & Aurora-a

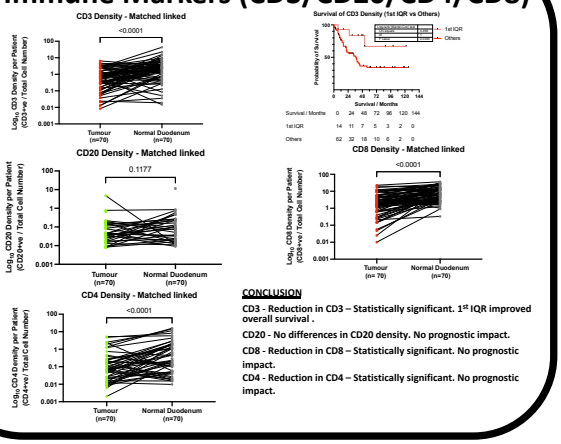
Beclin-1 and Aurora-A have previous been suggested as a potential prognostic biomarkers in DA patients. [1,2]



CONCLUSION

Beclin-1 expression - No difference. No prognostic impact.
Aurora-A expression - No difference. No prognostic impact.

7. Immune Markers (CD3/CD20/CD4/CD8)



CONCLUSION

CD3 - Reduction in CD3 – Statistically significant. 1st IQR improved overall survival .
CD20 - No differences in CD20 density. No prognostic impact.
CD8 - Reduction in CD8 – Statistically significant. No prognostic impact.
CD4 - Reduction in CD4 – Statistically significant. No prognostic impact.

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References

1) Wu, X.Y. et al, (2013) Tumour Biol, Beclin 1 activation enhances chemosensitivity and predicts a favorable outcome for primary duodenal adenocarcinoma
2) Chen J. et al (2014) Tumour Biol, Prognosis value of mitotic kinase Aurora-A for primary duodenal adenocarcinoima