

Macrophage Function in the DIPG Tumor Microenvironment

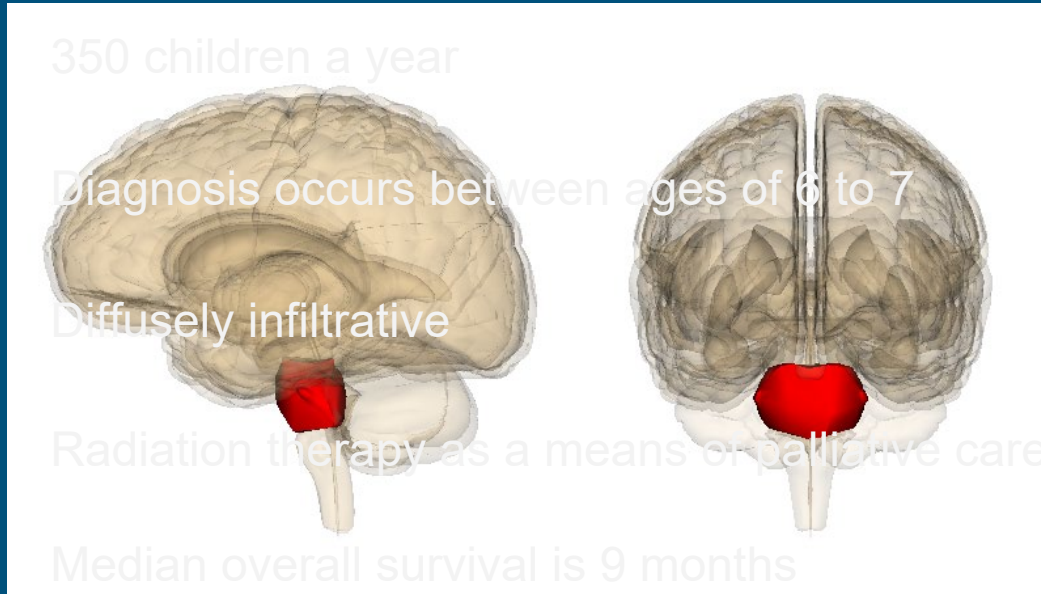
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Background: Diffuse Intrinsic Pontine Glioma (DIPG)

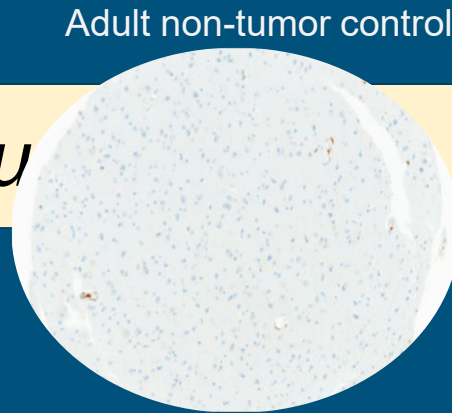
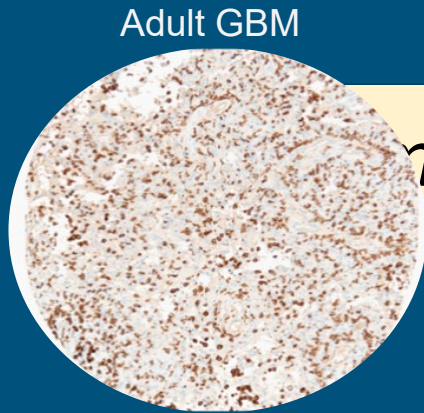
- Aggressive pediatric brain tumor arising in the Pons



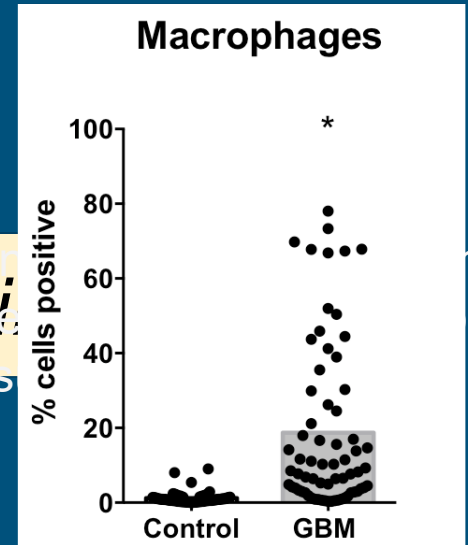
Immunotherapy and the Tumor Microenvironment

- Immunotherapy has the potential to target cancer cells and leave healthy cells
- The tumor immune microenvironment influences the efficacy of immunotherapy

Immunosuppressive tumor microenvironment in adult GBM

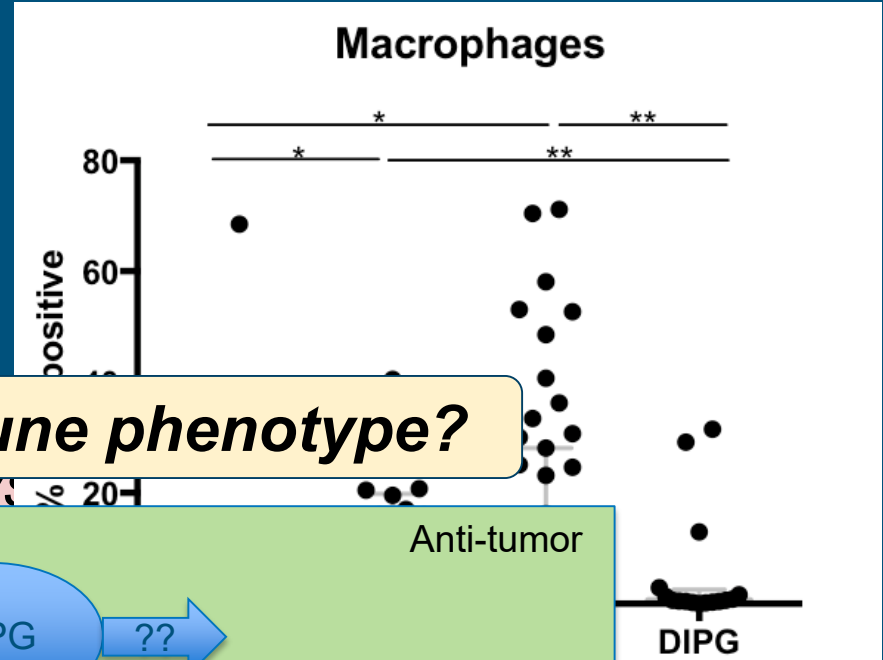


- Blocks antigen presentation
- Immunosuppression



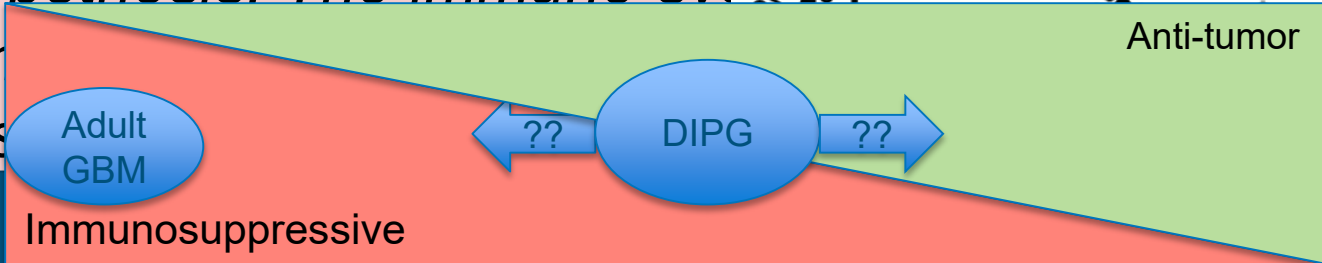
Preliminary Findings

- Analyzed IHC stains of immune markers
 - Low recruitment of macrophages



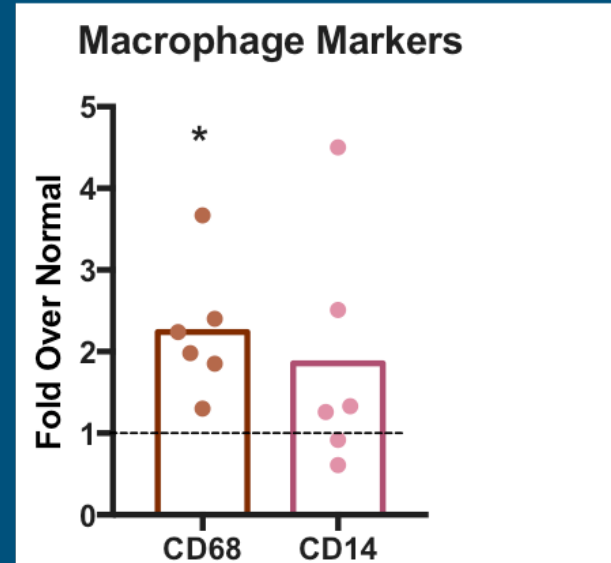
What is the immune phenotype?

Hypothesis: The immune system is immunosuppressive in DIPG



Two-Fold Increase in Macrophage Transcripts in Tumor Relative to Normal

- Performed Nanostring analysis (Cancer Immunology Panel, 770 genes)
 - Using matched tumor and normal brain samples (n=6) from DIPG patients
- Relatively low macrophage recruitment
 - Supports IHC data

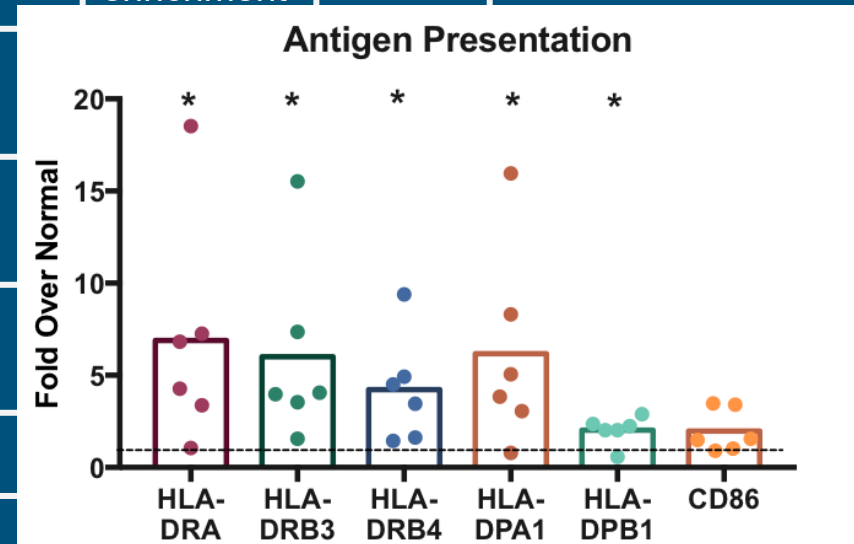


Pathway Analysis Reveals Enrichment of Antigen Presentation Molecules

- Only 4 significant pathways, all involved in antigen presentation

Biological process	Fold enrichment	P-value
Antigen processing & presentation of exogenous peptide antigen		
Antigen processing & presentation of peptide antigen		
Antigen processing & presentation of exogenous antigen		
Antigen processing & presentation		

- Increased antigen presentation molecules in tumor compared to normal brain





Conclusions

**Kids are not tiny
adults**

DIPG compared to adult GBM

Few macrophages present

Presenting antigen



Initiating immune response

Hope for future immunotherapy treatments

Acknowledgements



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