Memorial Sloan Kettering
Cancer Center

MP08-12: Transcriptional programs in clear cell renal cell carcinomas with necrosis on imaging

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Background and Methods:

- Necrosis has been shown to be an independent prognostic factor in RCC
- Proportion of non-enhancing tumor or necrosis volume on computed tomography can accurately predict necrosis at the histologic level
- Retrieved imaging data from 183 patients from the TCGA ccRCC cohort (Firas et al.) and clinicopathological and RNAseq data from the GDC portal

Characteristic	Overall (n = 183)	Patients With Necrosis Component < Median (n = 91)	Patients With Necrosis Component ≥ Median (n = 92)
AJCC Stage			
Stage I/II	110 (61)	67 (73)	43 (47)
Stage III	48 (26)	19 (21)	29 (32)
Stage IV	25 (14)	5(5)	20 (22)

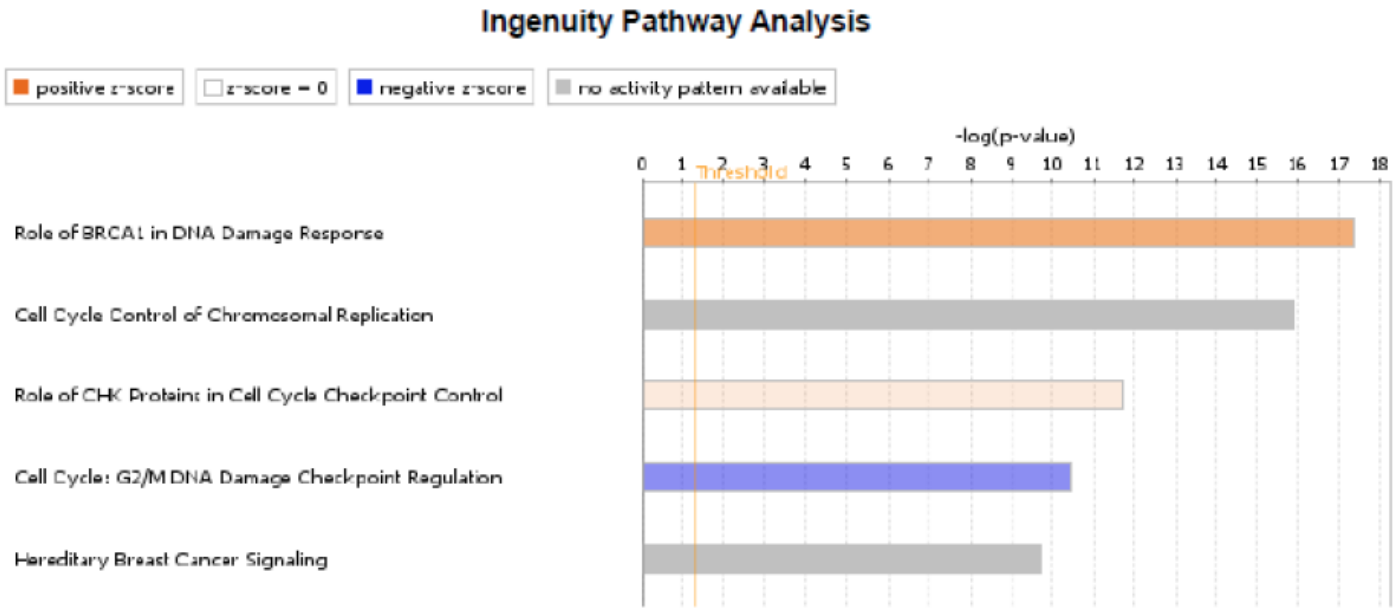
(Firas et al.)

- Median tumor size was 5 cm (range 1-17)
- Median proportion of necrotic tumor was 8% (IQR 3-17%)

- Analyzed imaging and transcriptomic data to look for differences in gene expression of tumors with and without necrosis
- Performed differential gene expression and ingenuity pathway analysis

Results & Conclusions:

- **Necrotic ccRCC tumors have higher proliferation and interferon mediated immune infiltration** than non-necrotic tumors.



- Significant differences in the gene expression profile of necrotic and non-necrotic tumors
- DNA damage, immune response, and cell cycle regulation pathways seem to have differential activity between these groups of tumors

Next Steps:

- Determine whether imaging necrosis can serve as a biomarker for immunotherapy response in ccRCC

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