Presented at AACR 2017

Patient History

The patient was a 56-year-old woman with metastatic triple negative breast cancer (TNBC). In October 2013, she consented to enrollment in the Intensive Trial of Omics in Cancer clinical trial (ITOMIC-001). During the study period, the patient underwent weekly chemotherapy treatments and her ctDNA/cfDNA were collected.

Methods

- **Study Day**

  - **Figure 1.** Genomic Analysis of CTCs and cfDNA from Different Time Points. CTCs and cfDNA were isolated using the AccuCyte-CytoFind system from RareCye Inc., Seattle, WA. cfDNA was extracted from 32 serum samples from various time points over the study period. The above figure, solid arrows indicate weekly cisplatin treatment. Open arrows indicated cisplatin treatment every 3 weeks. Crizotinib treatment is denoted by an open rectangle and Eribulin treatments are identified within a given sample. The results show that although there are changes over time with respect to the GIN which coincide with treatment, overall the genomic profile is not consistent with what would be seen for a normal healthy individual.

Conclusions and Future Directions

- Each CTC examined contains different affected pathways suggesting a highly heterogeneous CTC population.
- The GIN calculated for the cfDNA follows the CTC profile as expected due to genomic instability.
- Numerous genes show CNV based on the cfDNA analysis.
- A targeted mutation panel was used on the cfDNA and no actionable mutations were identified.
- Future work includes:
  - Examining the CNV profiles for all cfDNA samples analyzed to perform network analysis
  - Determine whether there are pathways in common between CTCs and other cfDNA timepoints