Clinical Utilization and Performance Characteristics of Large NGS Gene Panel in The Community Practice Setting

Stephen Lyle, Jia Xu, Claudia S. Huettner, Scott Schell, Meaghan Russell, Alexei Protopopov

KEW Group Inc., Cambridge, MA; Dept. of Cancer Biology, UMass Medical School, Worcester, MA

INTRODUCTION

Evaluation of patient tumors by large NGS gene panels is becoming routine at large academic cancer centers. However, adoption and utilization of these diagnostic tools has not been studied in the community oncology practice setting. Matching a patient's tumor mutational profile with targeted agents is the primary goal of personalized medicine in all treatment settings. The number of therapies entering clinical trials is continually increasing and these trials are becoming widely available in community oncology practices. Unlike academic centers where institutional funds typically cover NGS testing, community setting testing is reimbursed by commercial and government payers. We evaluated clinical utilization, performance, and payer characteristics in 100 sequential large NGS panels ordered by community practice oncologists.

METHODS

100 sequential NGS gene panel results, obtained from community practice oncology groups, were evaluated for tumor type, stage and specimen source. Tumor profiling of 413+ genes (including translocations in ALK, RET, and ROS1) was performed in a CLIA-certified laboratory (KEW Group Inc., Cambridge, MA), and variants were sorted into three major categories:

- FDA-approved therapy;
- Therapy in clinical development;
- Other variants in cancer genes.

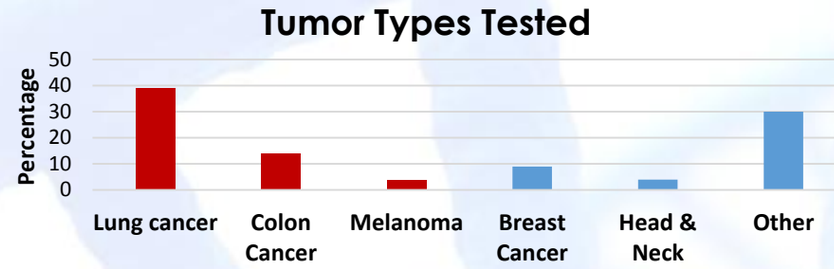
Insurance payer information was reviewed.

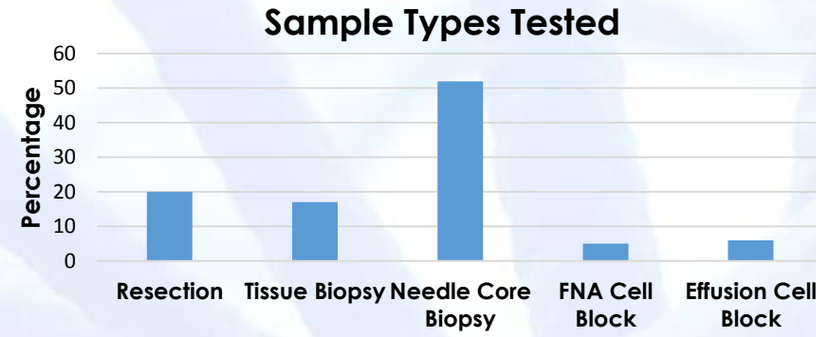
RESULTS

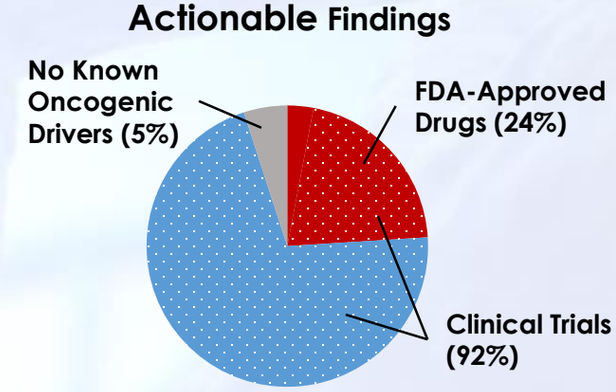
57% of samples represented diagnoses where genomic testing is required for treatment planning: Lung (39%); Colon (14%); and Melanoma (4%). Advanced breast cancer frequency was 9%; HNSCC 4%; and the remaining 30% from various other sites, including 18% rare cancers with no standard therapy options. Actionable results were identified in 95% of patients: 24% FDA-approved therapies; 76% Therapies in clinical trials.

63% of samples were core biopsies, FNAs, or effusions.

Private-payer insurance reimbursement was provided for 53% of patients, with highly variable reimbursement rates.







CONCLUSIONS

- The majority of NGS panels utilized in the community practice setting represent small biopsies of lung, colon, and melanoma patients where genomic testing is required for treatment planning;
- In these settings the value and performance of NGS gene panel testing is readily apparent;
- Private payer reimbursement provides access for testing.

KEW CancerPlex® Current Gene List: www.kewgroup.com/sites/default/files/uploads/downloads/kewcancerplexfactsheet.pdf

REFERENCES

- J Clin Oncol 33:5s, 2015 (suppl; abstr e17508)
- J Clin Oncol 33:5s, 2015 (suppl; abstr e22138)

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