At-home complete blood count monitoring

Enhancing care pathways and improving patient experience

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SAN ANTONIO BREAST CANCER SYMPOSIUM®

Introduction

With myelosuppressive chemotherapy still extensively used and many antibody drug conjugates showing similar cytotoxic properties, CBCs continue to be a cornerstone of clinical decision making in cancer therapy [1]. Historically, the need for in-clinic testing has presented logistical challenges for patients, reduced the efficiency of service delivery and delayed identification of complications such as febrile neutropenia, anemia and thrombocytopenia [2].

To address this, the world's first CBC analyzer has been developed for accessible use by cancer patients in the home (Liberty). The analyzer enables convenient patient self-testing from a single drop of capillary blood (16µL) through use of microfluidic consumables, centrifugation and fluorescent spectroscopy. The results are shared remotely to healthcare professional dashboards directly from the analyzer, providing the opportunity for more convenient and frequent CBC monitoring.

Methods & Materials

A cohort of breast cancer patients receiving systemic anti-cancer therapy (SACT) were selected for a qualitative sub-study from a larger multi-center, multi-indication comparator study evaluating at-home self-testing with Liberty versus standard of care venous blood testing at a health center.

The primary endpoint was preference for at-home self-testing with Liberty versus standard of care venous blood testing at a health center.

The secondary endpoint was healthcare resource utilisation across both monitoring pathways. Exploratory endpoints included patient experience of training, self-testing, ease of use and recommendation to other patients.

Primary and exploratory endpoints were determined via questionnaires issued after at least two tests had been completed. Questionnaires asked participants their preference for self-testing compared to standard testing and to rate on a scale of 1-5, their experience of training, self-testing, acceptability of testing cadence, sense of control, perceived time savings, overall patient experience, likelihood to recommend Liberty to other patients and any additional comments.

Patients receiving a range of SACT (paclitaxel, ribociclib, abemaciclib, trastuzumab deruxtecan, sacituzumab govitecan) were recruited over 9 months to this sub-study (n=10).

Results

Overall preference for self-testing with Liberty versus in-clinic testing:



Patient preference endpoints:

Experience of patient training	**5.0** median: 5
Experience of self-testing with Liberty	**4.9** median: 5
Perceived sense of control	**4.0** median: 5
Willingness to keep testing at the defined cadence	**4.6** median: 5
Perceived time savings	**4.6** median: 5
Overall experience	**4.6** median: 5
Likelihood to recommend Liberty to other patients	**4.9** median: 5

No adverse events were reported.

1: low / poor; 5: high / excellent



Conclusion

Liberty was the preferred pathway for blood monitoring and may help to reduce the significant burden faced by patients and healthcare systems for cancer treatment. Subsequent real-world usage of Liberty has demonstrated reductions of up to 91% of routine in-clinic blood tests and shown its utility in avoiding unnecessary emergency room attendance.

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