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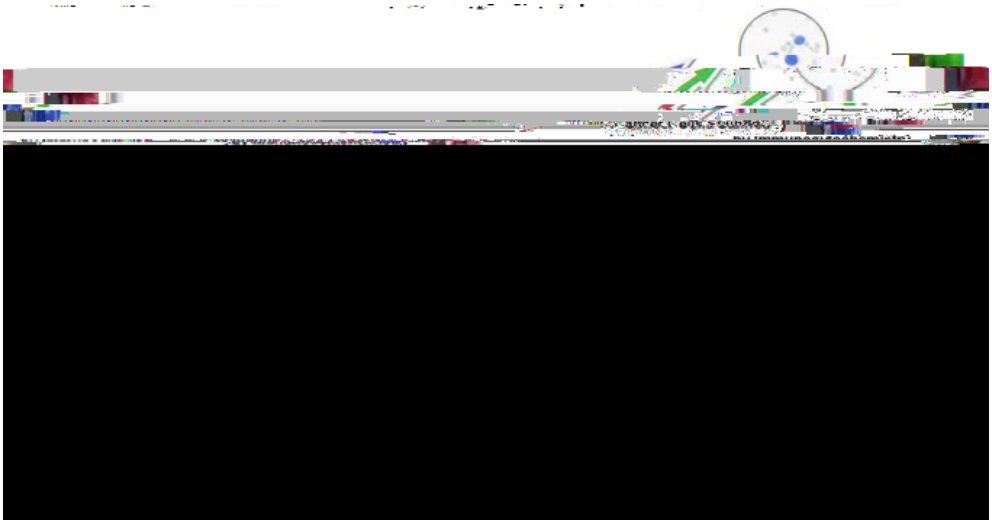
centrifugation. CTCs with speci c gravity <1.047 gm/ml will reach to the top a er centrifugation process. Extract the top layer containing CTC. e CTC's are the separated mainly based on di erences in the size and deformability between CTCs and hematologic cells. As tumor cells (>8 µm) are larger than leukocytes, isolation by size of epithelial tumor cells (ISET) can be achieved using ltration to separate individual cells [9].

e collected supernatant is passed through the separation tube containing membrane lter which allows the passage of hematological cells. Figures 2 and 3 haematological cells are <8 µm, so it will pass through the lter. Now the supernatant contains only CTC. Merisis™ CTC tube uses membrane lter that are inexpensive and user-friendly method of enriching CTCs, thus enables the recovery and detection of CTCs on the basis of size-dependent CTC isolation.

e captured cells have also been tested for epithelial and mesenchymal markers and a substantial number of the cells (~86%) were positive, showing the advantage of size-based separation. CTCs were counted, identi ed as being cytokeratin positive and CD45 negative and EpCam positive. Genetic analysis, which can provide diagnostic and prognostic information, can also be carried out on



Type/Groups	No of patients	CTC count/10 ml blood
Suspects	10	4+/- 2 cells
Cancer patients	10	10+/- 2 cells
Healthy	15	5+/- 2 cells

Table 1: CTCs count in test subjects.

Key parameter	Merisis CTCs tube	Other enrichment techniques
Blood sample capacity	8 ml	10 ml
Sample preprocessing requirements	No need	Need
Cost of consumables and equipment	Less	High
Processing speed	Within 2 days	More than 1 week
Purity of CTCs	High	Low
Cell viability	>95%	80% - 90%
Capture e f ciency	>99%	90% - 95%

Table 2: Advantages of Merisis CTC technology.

live cells. Ct DNA was isolated and are used to study gene expression pro le by Real Time PCR (Figure 1).

CTCs were detected in 10 +/-2 /10ml of blood using Merisis CTC kit. e number of CTC's were ≤ 5 in healthy and suspected patients. e results are shown in Table 1.

Analysis of CTCs can save a patient from worsening the condition with unsuitable medications. Furthermore, the earlier they are detected, faster and better treatment options can be made available to the patient. It provides the basis of understanding mutations and genotypic changes of malignant cells and hence provides the best suitable targeted therapy. CTCs are multifunctional biomarkers and enable us to assess the patient serially along the treatment journey. ey are potentially an alternative to invasive biopsies for detection, characterization and monitoring of non-hematological cancers [9-11].

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