Long-term clinical outcomes of cancers diagnosed following detection by a blood-based multi-cancer early detection (MCED) test

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Background

- Less than one in four incident cancers in the US are diagnosed as a result of standard of care (SoC) screening.[1]
- Multi-cancer early detection (MCED) tests may expand screening to more cancers, but the long-term outcomes of MCED test-detected cancers are unknown.
- DETECT-A was the first prospective interventional clinical trial utilizing an MCED blood test. An early version of CancerSEEK was evaluated in 9,911 women without history of cancer.[2]
- This follow-up study evaluated longitudinal clinical outcomes of cancers diagnosed as a result of an abnormal CancerSEEK test with a median follow up of 4.4 years from initial CancerSEEK testing.

Methods

- 9 cancer types were diagnosed in 26 participants whose cancers were first detected by CancerSEEK.[2]
- Participant clinical information was extracted from electronic medical records through November 2022.
- Data collection for living participants took place a median of 3.7 years following cancer diagnosis (interquartile ratio (IQR): 3.3-3.9) and a median of 4.3 years (IQR: 4.1-4.7) following initial CancerSEEK screen.

References

1. Siegel RL, Miller KD, Wagle NS, et al. CA: A Cancer Journal for Clinicians 2023; 73:17-48.
2. Lennon AM, Buchanan AH, Kinde I, et al. Science 2020;369.

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Results (Table 1)

14 (53.8%) participants underwent surgery:

- 12 (85.7%) were in remission at last follow-up
- 10 had stage I/II/III disease @ diagnosis (Dx)

12 had non-surgical (11) or unknown (1) treatments:

- 1 (8.3%) was in remission (stage I @ Dx)
- 9 (75.0%) were deceased (stages III/IV @ Dx)
- 2 (16.7%) were in surveillance or ongoing treatment (stages II/III @ Dx)

13 (50%) participants were in remission at last follow-up:

- 4 ovarian, 1 thyroid, 2 uterus, 1 breast, 2 colorectal, 3 lung
- **7 of 13 (54%) had cancers without recommended SOC screening modalities**

11 of the 13 patients in long-term remission had stage I, II, or III disease @ Dx

Half of all patients with a CancerSEEK-detected cancer were successfully treated and remain cancer-free >4 years (median) after their initial CancerSEEK test.

Seven of these 4+ year survivors had cancers with no SoC screening options.

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Table 1. Clinical information for participants with positive CancerSEEK results.

Primary cancer organ (n)	Stage	Treatment	Status (11/16/2022)	Surgery Type
Appendix (1)	II	Surveillance	Surveillance	N/A
Kidney (1)	III	Surgery	Ongoing Tx	Nephrectomy
Lymphoma (2)	III III	Chemo + Antibody Antibody	Ongoing Tx Deceased	N/A N/A
Ovary (6)	I III IV IV IV IV	Surgery Surgery + Chemo Surgery + Chemo Surgery + Chemo Chemo Surgery + Chemo	Remission Remission Deceased Remission Deceased Remission	TAH-BSO Sigmoidectomy TLH-BSO TAH + Omentectomy N/A TAH-BSO
Thyroid (1)	I	Surgery	Remission	Total thyroidectomy
Uterus (2)	I I	Surgery + Radiation Surgery + Hormone	Remission Remission	TLH-BSO TLH-BSO
Breast (1)	III	Surgery + Chemo	Remission	Partial mastectomy
Colorectal (2)	II III	Surgery Surgery + Chemo	Remission Remission	Hemicolectomy Hemicolectomy
Lung (10)*	I II II III III IV IV IV IV IV*	Radiation Surgery + Chemo Surgery Chemo Chemo Chemo Unknown Kinase inhibitor Chemo Chemo + Radiation	Remission Remission Remission Deceased Deceased Deceased Deceased Deceased Deceased Deceased	N/A Lobectomy + thoracic lymphadenectomy Thoracotomy + lobectomy N/A N/A N/A N/A N/A N/A N/A

*Includes 1 carcinoma of unknown primary origin that was noted as possible small cell lung cancer. BSO, bilateral salpingo oophorectomy; TAH, Total abdominal hysterectomy; TLH, Total laparoscopic hysterectomy.

Additional biomarkers, utilizing new analytic methods and algorithms, are being incorporated in the development of the next generation of the MCED test.

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