



DETECT-A participants with pre-malignant conditions diagnosed consequent to an MCED test

Omar Choudhry,¹ Angana Kharge,¹ Seema Rego,¹ Paul Elias,¹ Adam Buchanan,² Anne Marie Lennon,³ Nick Papadopoulos,³ Frank Diehl,¹ Tomasz M. Beer^{1*}

¹Exact Sciences Corporation, Madison, WI, ²Geisinger, Danville, PA, ³Johns Hopkins University, Baltimore, MD *Corresponding author: tbeer@exactsciences.com

Poster
2449

1 BACKGROUND

- Blood based tests for multi-cancer early detection (MCED) are being developed to facilitate the earlier detection of various cancer types.
- The Detecting cancers Earlier Through Elective mutation-based blood Collection and Testing (DETECT-A) study evaluated the CancerSEEK MCED test, an early version of the Exact Sciences CancerGuard™ test in development, in 9,911 women, age 65-75 of age, without previous history of cancer.¹
- The degree to which MCED testing will facilitate detection of pre-cancerous conditions or incidental findings is unclear.

2 OBJECTIVES

The focus of this analysis was on DETECT-A participants who had pre-cancerous conditions diagnosed during a diagnostic work-up following a positive CancerSEEK MCED test.

3 METHODS

In a post-hoc analysis, we report on the detection of pre-cancerous conditions identified consequent to CancerSEEK MCED testing and follow-up diagnostic evaluations. Electronic health records were reviewed for diagnostic procedures performed and clinical outcomes.

4 RESULTS

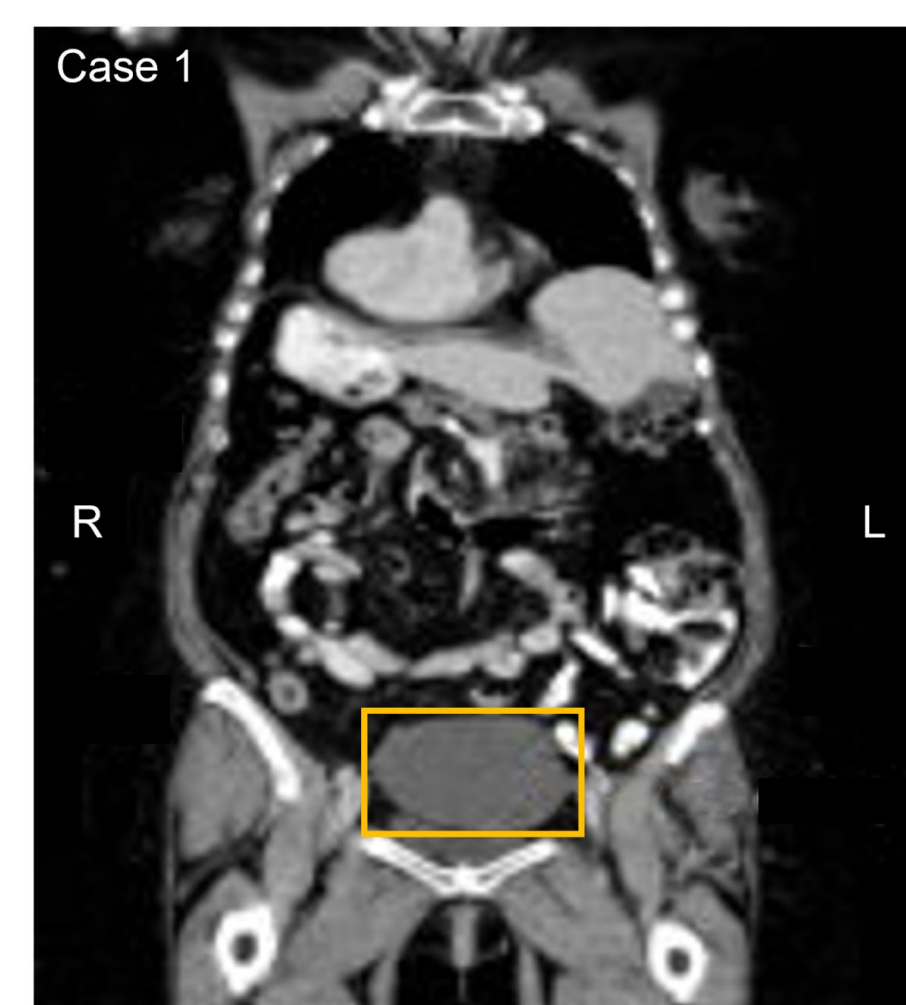
In three participants, mutations in *PIK3CA*, *TP53*, or *KRAS* genes led to a positive CancerSEEK MCED test result. The prescribed DETECT-A imaging protocol using 2-deoxy-2[fluorine-18] fluoro-D-glucose positron emission tomography-computed tomography (18-FDG PET-CT) revealed a 10.3 x 9.8 x 7.8 cm ovarian mucinous cystadenoma, a 0.8 cm appendiceal mucinous neoplasm, and 4.5 cm and 5.0 cm colonic adenomas displaying high-grade dysplasia. All three participants were diagnosed with clinically significant pre-cancerous lesions, subsequently underwent surgical treatment, and remain alive and cancer-free as of February 2023 (Table 1).

Table 1. Positive CancerSEEK MCED test results and consequent findings

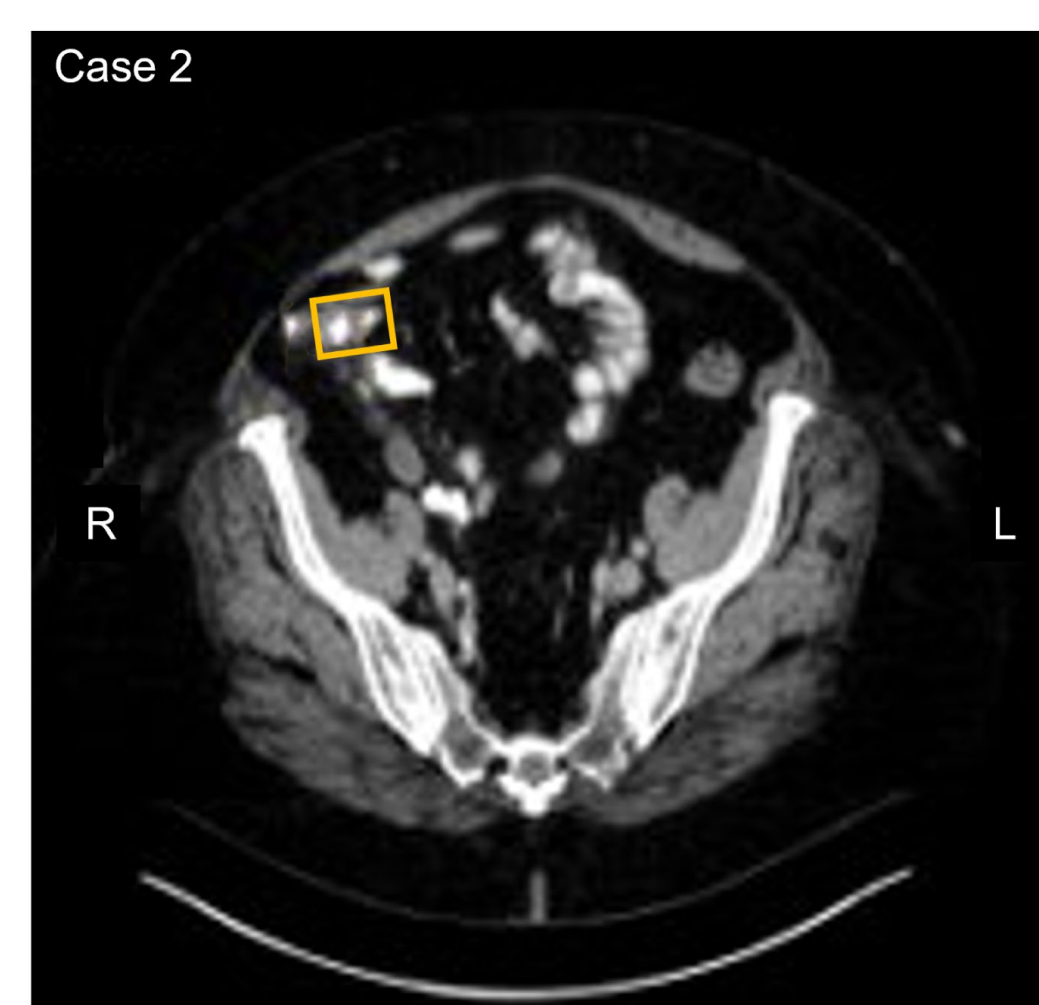
	CancerSEEK Baseline Test	CancerSEEK Confirmation Test	DETECT-A Imaging	Diagnostic Evaluation	Pre-malignant Conditions Identified	Treatment	Status (02/2023)
Participant 1	DNA (<i>PIK3CA</i>) chr3 178921548 G>A	DNA (<i>PIK3CA</i>) chr3 178921548 G>A	18-FDG PET CT	CT Scan	Benign ovarian mucinous cystadenoma	Surgery- Laparoscopic Left Oophorectomy and Salpingectomy	Alive and cancer-free
Participant 2	DNA (<i>TP53</i>) chr17 7578265 A>G	DNA (<i>TP53</i>) chr17 7578265 A>G	18-FDG PET CT	Colonoscopy	Carcinoma in situ of the appendix	Surgery- Laparoscopic appendectomy and partial cecectomy	Alive and cancer-free
Participant 3	DNA (<i>KRAS</i>) chr12 25398284 C>T	DNA (<i>KRAS</i>) chr12 25398284 C>T	18-FDG PET CT	Colonoscopy	Colonic adenomas with high grade dysplasia	Surgery- Right hemicolectomy	Alive and cancer-free

A, adenine; C, cytosine; chr, chromosome; CT, computed tomography; 18-FDG PET CT, 2-deoxy-2[fluorine-18] fluoro-D-glucose positron emission tomography-computed tomography; G, guanine; *KRAS*, Kirsten rat sarcoma virus; *PIK3CA*, phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha; T, thymine; *TP53*, tumor protein p53.

Figure 1. CT scan images highlighting key findings in three cases



Participant 1
Benign ovarian mucinous cystadenoma.



Participant 2
Carcinoma in situ of the appendix.



Participant 3
Colonic adenomas with high grade dysplasia.

5 LIMITATIONS

Some of the study limitations include:

- The report is limited to premalignant conditions that were diagnosed consequent to MCED testing. It does not report on premalignant conditions in patients with a negative MCED result.
- We cannot confirm that the mutation signals identified by the CancerSEEK MCED test originated from the pre-cancerous lesions.
- The study only focuses on women between 65-75 years of age from a single health system.

6 CONCLUSIONS

The diagnostic evaluation of a positive MCED test may occasionally reveal clinically significant pre-cancerous conditions amenable to interventions. The frequency of such findings and their clinical impact warrants further study.

Discovery of pre-cancerous conditions through MCED testing underscores the potential for early intervention. Further research is needed to fully understand the frequency and clinical implications of these findings.

REFERENCES

- Lennon AM, Buchanan AH, Kinde I, et al. Science 2020;369.

DISCLOSURES

This study was sponsored by Exact Sciences Corp., Madison, WI.

ACKNOWLEDGEMENTS

Medical writing and editorial support was provided by Carolyn Hall, PhD, and Feyza Sancar, PhD (Exact Sciences, Madison, WI).