



SURVIVAL PROBABILITY REPORT

Report Date: [REDACTED]
Turnaround Time: Standard (5 Business Days)
Date of Last Medical Record: August 01, 2018

Case Number: [REDACTED]
Tracking ID: [REDACTED]

Full Name: [REDACTED]
Date of Birth: [REDACTED] (current age = 69.3 years)
Gender: female
Smoking Status: never smoker
Height: 5' 5", Weight: 142 lbs (BMI 23.63) (healthy)
Education: no data
Family Income: no data
Marital Status: Married
Physical Activity: no data
Self-Reported Health: no data
of Relatives Aged 85 or Over: no data
Cholesterol: no data
Blood Pressure: 102/60
Fasting Blood Sugar: no data
Age at Menopause (f): 50 years

Conclusion

Case No. [REDACTED]: Lapetus LE = **48 months** (range = 36 to 60 months)

Conditional Survival Probabilities to Subsequent Ages

[Presented as survival probabilities to calendar years from date of Lapetus LE estimate. For example, a survival probability of 1 = 60% means there is a 60 percent chance the person will be alive one year from the date of assessment; and a 40% chance of death in that calendar year. Survival probabilities do not always correspond precisely to the projected median age at death.]

1 = 82.4%
2 = 66.7%
3 = 52.7%
4 = 40.5%
5 = 30.1%
6 = 21.6%
7 = 14.9%
8 = 9.9%
9 = 6.2%
10 = 3.7%
11 = 2.0%
12 = 1.0%
13 = 0.4%
14 = 0.2%
15 = 0.0%

Medical History Summary

Case No. [REDACTED]: This patient is a married 69-year old female physician, never smoker whose primary impairments include Stage IVB uterine leiomyosarcoma with resected brain metastases. Incidental finding of stage Ia endometrioid ovarian cancer, osteopenia and a personal history of colonic polyps. In addition, non life-threatening findings are a history of eczema, allergic rhinitis and a fibroadenoma of the breast. She is status post cholecystectomy.

She presented to the Emergency room on 12/18/15 with a 2 day history of difficulty with cognition. Imaging studies revealed a frontal lobe mass on CT of the brain. CT of the torso showed an enlarged heterogeneous intramural uterine mass with cystic and necrotic transformation. On 12/19/15 she underwent craniotomy with resection of the brain metastases, pathology confirmed high grade spindle cell neoplasm. On 12/24/15 she underwent TAH/BSO and open cholecystectomy with common bile duct exploration and intraoperative cholangiogram and T-tube placement. Pathology consistent with a

uterine leiomyosarcoma, 9.5 cm, cervix not involved, margins negative, with angiolymphatic invasion (LVI) and washings were negative: pT1bpNxpM1 (FIGO) IVB stage. An incidental finding of left ovarian endometrioid cancer noted, 4mm, grade 1, surface not involved, no LVI : stage IA (pTa1pNx). Immunohistochemical stains confirmed that the brain pathology consistent with a uterine leiomyosarcoma. Positive for Calponin B and Cam 5.2, p53 wild type. Variable staining of design and smooth muscle actin. On 1/21/16 she underwent gamma knife radiosurgery. From 2/5/16-6/2016 she received chemotherapy with Docetaxel and Gemcitabine for a total of 6 cycles every 21 days with neulasta support. She noted rapid improvement in cognition post surgery and was able to return to work. She had serial imaging thereafter, initially MRI of the brain every 3 months and then every 6 and now annually. Her last MRI of the brain on 9/22/21 was negative. Ct scan of the chest, abdomen and pelvis as of 1/2019 was negative for metastases. CARIS gene profiling showed amplification of CCND1 and 3, which can be used for future need of treatment. Furthermore, next generation sequencing showed mutation variant of unknown significance affecting: APC, C-kit, MEK2, PTCH1, and noted a p53 mutation.

She experienced left inguinal hernia damage post operative and received physical therapy and was in rehab after surgery. She initially had left medial leg numbness and left knee extension weakness and this improved. She has osteoarthritis of the hips and as of 3/2017 found to have a subchondral stress fracture of the left hip. Hashimoto's is listed but no details seen. She follows with dermatology and has a history of eczema, no skin cancer seen. History of allergic rhinitis noted.

As of 2018, only medication were supplements of biotin and folic acid. Prior colonoscopy in 2012, finding of a descending colon tubular adenoma, recommended for 5 year follow up. DEXA scan in 2018 revealed osteopenia. Mammogram up to date as of 2019 as was gynecologic examination with no significant finding. Distant history of LEEP in 1990 and breast fibroadenoma in 1987.

Family history is significant for father who passed away with a history of Diabetes Mellitus, coronary artery disease and hypertension. Mother died in a motor vehicle accident. Maternal cousin with breast cancer age 48. Brother resides in France. She has one child and is an internist and per last reports was still working. Vaccination history is not known. Her cognitive function returned to baseline. She has no documented DM or ischemic heart disease.

The last medical visit seen is from 8/2018, however, there are imaging studies dating up to 9/22/21.

Mortality Summary

The average remaining duration of life for a woman this age in the United States is **209.9 months**.

The Lapetus estimated remaining duration of life is **48 months**.

This is a married 69-year old never smoker female physician whose primary impairments are Stage IVB uterine leiomyosarcoma with resected brain metastases. Incidental finding of stage Ia endometrioid ovarian cancer, osteopenia and a personal history of colonic polyps. In addition, non life-threatening findings are a history of eczema, allergic rhinitis and a fibroadenoma of the breast. She is status post cholecystectomy.

Uterine leiomyosarcoma (LMS) is a rare uterine malignancy; with an annual incidence of 0.64 per 100,000 women, it accounts for 1% of all uterine malignancies and approximately 30% of all uterine sarcomas. Unlike uterine adenocarcinoma, which has a relatively favorable prognosis, uterine LMS is generally associated with a poor outcome[1]. Leiomyosarcomas diagnosed according to the WHO criteria 3 are associated with poor prognosis even when confined to the uterus at the time of diagnosis[2]. Recurrence rate ranges from 53% to 71%. First recurrences occur in the lungs in 40% of patients and in the pelvis in only 13%. Overall 5-year survival rate ranges from 15% to 25% with a median survival of only 10 months in one study[3]. In the Norwegian series, 148 patients with leiomyosarcomas limited to the uterus had a 5-year survival of 51% at Stage I and 25% at Stage II (by the 1988 FIGO staging classification). All patients with tumor spread outside the pelvis died within 5 years[2]. In completely resected organ-confined disease (Stages I and II), the influence of adjuvant systemic therapy or radiotherapy on survival is uncertain[4].

It must be noted that she had early ovarian cancer cured by surgery. She is currently 6 years from surgery of solitary brain metastases treated with gamma knife radiation. A follow-up brain MRI in 9/2021 was negative and one year follow up imaging studies recommended. Her last CT in 2019, 3 years ago, was negative for recurrent disease. She is unusual in that she is currently 6 years out and remains in remission. Brain metastasis from uterine leiomyosarcoma is extremely rare and review of the literature showed 2 cases[5,6], both were not synchronous and she is an unusual and atypical case. Women with LMS have a poor prognosis regardless of stage[7]. The 5-year disease-specific overall survival for stage IV disease was 29%. She is already 6 years from diagnosis. Based on the diagnosis, recurrence can occur due to the presence of micro metastatic disease following surgery with potential spread to the lungs, lymph node or other organs and if limited can be amenable to surgical resection. If not, treatment is palliative with limited survival.

As she is otherwise healthy and on no prescription medications and has no other significant concurrent illness it is assumed that she remains in remission. Her last available CT scans seen are from 3 years ago and brain from less than 6 months ago. She is well outside the usual realm of survival for this disease. As noted above with extensive literature support, long term survival is rare in stage 4 disease. Furthermore, her vaccination status is not known. This could have an impact if she is not vaccinated and would increase her susceptibility to COVID19.

There is justification in the medical record to warrant about a 77 percent reduction in expected survival to 48 months relative to the average level of survival observed for a woman her age; the 10-year survival probability is 4 percent; and the expected death age is 73 years. Her ceiling is potentially much higher if she remains in remission but should she experience a recurrence then her floor and ceiling would be markedly reduced.

Zivanovic O, Leitao MM, Iasonos A, et al. Stage-specific outcomes of patients with uterine leiomyosarcoma: a comparison of the international Federation of gynecology and obstetrics and american joint committee on cancer staging systems. *J Clin Oncol*. 2009;27(12):2066-2072. doi:10.1200/JCO.2008.19.8366

Abeler VM, Royne O, Thoresen S, et al. Uterine sarcomas in Norway. A

histopathological and prognostic survey of a total population from 1970 to 2000 including 419 patients. *Histopathology*. 2009;54:355-366

Kapp DS, Shin JY, Chan JK. Prognostic factors and survival in 1396 patients with uterine leiomyosarcomas: Emphasis on impact of lymphadenectomy and oophorectomy. *Cancer*. 2008;112:820-830.

Nomonde Mbatani, Alexander B. Olawaiye, Jaime Prat. *International J. of Obstetrics and Gynecology*. Uterine sarcomas. Volume 143, Issue Special Issue: FIGO Cancer Report 2018 October 2018 Pages 51-58

[5] Yamada S, Yamada SM, Nakaguchi H, Murakami M, Hoya K, Matsuno A. A case of multiple brain metastases of uterine leiomyosarcoma with a literature review. *Surg Oncol*. 2011 Dec;20(4):e127-31. doi: 10.1016/j.suronc.2011.04.001. Epub 2011 May 25. PMID: 21616660.

Melone GA, D'Elia A, Brogna C, Salvati M. Uterine leiomyosarcoma metastatic to the brain: case report. *Tumori*. 2008 Nov-Dec;94(6):856-60. PMID: 19267106.

Zivanovic O, Jacks LM, Iasonos A, Leitao MM Jr, Soslow RA, Veras E, Chi DS, Abu-Rustum NR, Barakat RR, Brennan MF, Hensley ML. A nomogram to predict postresection 5-year overall survival for patients with uterine leiomyosarcoma. *Cancer*. 2012 Feb 1;118(3):660-9. doi: 10.1002/cncr.26333. Epub 2011 Jul 12. PMID: 21751199; PMCID: PMC4841453.

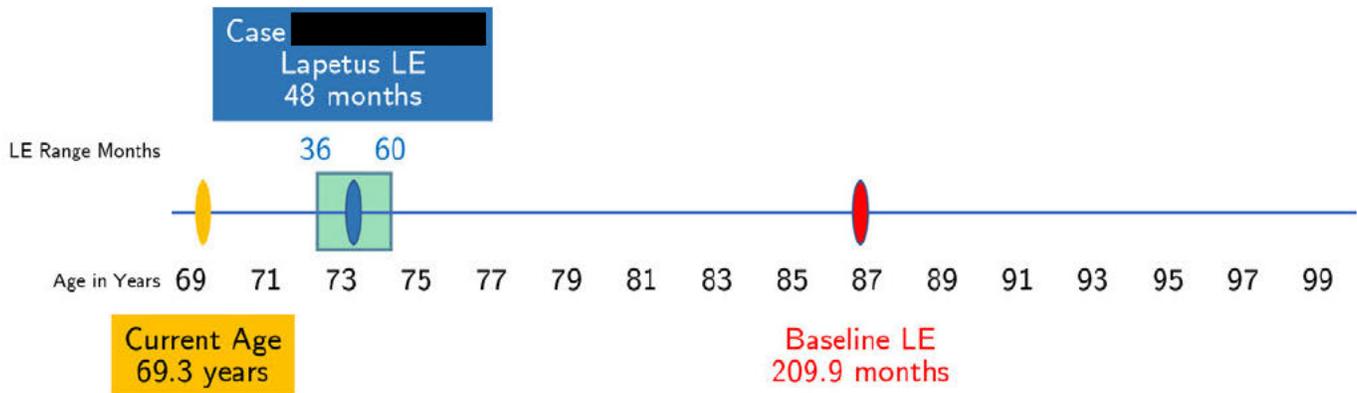
The last medical visit seen is from 8/2018, however, there are imaging studies

dating up to 9/22/21. It is assumed that she has remained stable since then with no new findings.

In my opinion as a physician, based on the medical records provided, there is evidence to suggest the patient's recent health status is: **Improving**

Are there signals in the medical record suggesting the patient could be a super ager*?: **Not enough information to judge**

* A superager is a member of a subgroup of the population that has already survived to at least age 80, and who retain their cognitive functioning longer than average and tend to live beyond what is considered average for their age and gender.



Case No. [REDACTED]
Current Age: 69.3 years
Baseline LE: 209.9 months
Lapetus LE: 48 months
Lapetus LE Range: 36 to 60 months
Lapetus Projected Death Age: 73.3 years
Lapetus Projected Death Age Range: 72.3 to 74.3 years
Lapetus Survival Skew: None
Lapetus 10-year Survival Probability: 3.7%

Misrepresentation

No misrepresentation detected

Lapetus Approach to Assessing Risk

Lapetus Solutions uses a specially designed proprietary methodology to combine independently derived methodologies, each with weights estimated based on the certainty of each in this particular case. Although each method may yield a different probability estimate in this report, the number in the CONCLUSION is a product of merging the methodologies – with a heavy emphasis on the importance of the medical records when impairments are documented.

The first method is based on an algorithm developed by Lapetus scientists that connects risk factors for an individual to their risk of death. The risk factors available for inclusion in the Lapetus platform (known as Chronos) include date of birth, gender, smoking status, BMI, education, family income, marital status, physical activity, self-reported health, cholesterol, blood pressure, fasting blood sugar, and age at menopause for females. Not all covariates will be available for each person being evaluated. These risk factors have a long history of association in public health with mortality risk. Lapetus scientists have combined them into a single assessment tool designed to weight each variable in accordance with its relative importance, yielding a customized estimate of life expectancy based on an individual's personal attributes – independent of medical history. Validation of the predictive power of these risk factors is based on data from a representative sample of the U.S. population dating back to the 1970s, which indicate that our accuracy rates, in accordance with guidelines set forth by the State of Florida is currently about 95%. * If any of these risk factors (with the exception of date of birth and gender) are unavailable, the module representing that risk factor is turned off and it is no longer included in the analysis.

The second method utilizes a combined qualitative/quantitative approach involving a thorough review of the medical records by a highly experienced physician/geriatrician/scientist with expertise in aging and longevity. Dr. Bradley Willcox; Professor and Director of Research at the Department of Geriatric Medicine, John A. Burns School of Medicine, University of Hawaii, and the Kuakini Medical Center. Lapetus medical reviews may also be completed by other equally qualified physician/geriatrician/scientists. Dr. Willcox also generates a mortality multiplier designed to reflect the unique anticipated mortality experience of an individual based on their medical history. The Willcox Mortality Multiplier reflects disease conditions in the LE estimate that cannot be detected with the use of Chronos. When the medical history is judged to be the most important risk factor, the results of Chronos are used primarily as a frame of reference.

Privacy Policy

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