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627.AGGRESSIVE LYMPHOMAS: CLINICAL AND EPIDEMIOLOGICAL

Frailty Predicts Worse Outcomes in Tumor Lysis SyndromeAshna Kamal, MBBS¹, Sindhu Vikash, MD², Fnu Vikash, MD³¹Simmons Cancer institute at SIU SOM, southern university of illinois, Springfield, IL²Jacobi Medical Center, Albert Einstein college of medicine, Bronx, NY³Jacobi medical center/albert einstein college of medicine, bronx, NY

INTRODUCTION Tumor lysis syndrome (TLS) is a potentially life-threatening complication that occurs in the setting of rapid tumor cell destruction. The Hospital Frailty Risk Score (HFRS) is a valuable tool to identify frailty in older individuals, signifying a decline in physiological reserves and coping ability due to age-related deterioration, and it has gained recognition as a crucial factor linked to adverse events, including mortality, hospitalization, and diminished functional outcomes. We aimed to assess the impact of HFRS on individuals admitted with a primary diagnosis of TLS.

METHODS Using weighted data from the Nationwide Inpatient Sample (NIS) database from 2016 to 2020, we assessed the outcomes (mortality, hospital utilization, total healthcare charges, complications) of individuals admitted with a primary diagnosis of TLS stratified by the presence and absence of Frailty (determined by the combination of 109 ICD-10 codes each with a different score) (table 1). Baseline characteristics were analyzed using T-test and Chi-Square, and a multivariate regression analysis was used to estimate outcomes between races, adjusted for patient and hospital confounders. Data analysis was performed using STATA® Version 17.0/SE Software, with statistical significance set at $p < 0.05$.

RESULTS A total of 4,340 were admitted with a primary diagnosis of TLS from 2016 to 2020, among these, we selected 1,330 admissions aged 75 years or older; these admissions included 59% (N=785) with frailty, and 41% (N=545) without frailty. Frailty was associated with increased length of stay (adjusted mean difference (aMD) = 2.5 days, 95%CI: 1.2 - 3.8 days), and total healthcare expenditures (aMD = 22,541 U.S. dollars (USD), 95%CI: 2,175 - 42,908 USD). Pertaining to the outcomes, a 9- fold increase in the odds of mortality were noted among individuals with frailty, as opposed to those without frailty (adjusted Odds Ratio (aOR) = 8.93, 95%CI: 1.79 - 44.74).

DISCUSSION Our study depicts the significant impact of frailty on individuals hospitalized with TLS, revealing associations with elevated mortality rates, prolonged length of hospital stay, and increased healthcare costs. Considering a considerable portion of cancer patients fall within the elderly demographic and often present with multiple comorbidities, the Hospital Frailty Risk Score (HFRS) is a potential valuable tool for assessing the appropriateness of chemotherapy in conjunction with other scores like the Eastern Cooperative Oncology Group (ECOG). Moreover, the HFRS may aid in prognosticating disease outcomes, offering clinicians valuable insights to inform treatment decisions and improve patient care.

Disclosures No relevant conflicts of interest to declare.

Table 1. Components of the HFRS (Hospital Frailty Risk Score)

Condition	ICD-10-CM	Points
1. Dementia in Alzheimer's disease	F00	7.1
2. Hemiplegia	G81	4.4
3. Alzheimer's disease	G30	4.0
4. Sequelae of cerebrovascular disease (secondary codes)	I69	3.7
5. Other symptoms and signs involving the nervous and musculoskeletal systems (R29-6 Tendency to fall)	R29	3.6
6. Other disorders of urinary system (includes urinary tract infection and urinary incontinence)	N39	3.2
7. Delirium, not induced by alcohol and other psychoactive substances	F05	3.2
8. Unspecified fall	W19	3.2
9. Superficial injury of head	S00	3.2
10. Unspecified haematuria	R31	3.0
11. Other bacterial agents as the cause of diseases classified to other chapters (secondary code)	B96	2.9
12. Other symptoms and signs involving cognitive functions and awareness	R41	2.7
13. Abnormalities of gait and mobility	R26	2.6
14. Other cerebrovascular diseases	I67	2.6
15. Convulsions, not elsewhere classified	R56	2.6
16. Somnolence, stupor and coma	R40	2.5
17. Complications of genitourinary prosthetic devices, implants and grafts	T83	2.4
18. Intracranial injury	S06	2.4
19. Fracture of shoulder and upper arm	S42	2.3
20. Other disorders of fluid, electrolyte and acid-base balance	E87	2.3
21. Other joint disorders, not elsewhere classified	M25	2.3
22. Volume depletion	E86	2.3
23. Senility	R54	2.2
24. Care involving use of rehabilitation procedures	Z50	2.1
25. Unspecified dementia	F03	2.1
26. Other fall on same level	W18	2.1
27. Problems related to medical facilities and other health care	Z75	2.0
28. Vascular dementia	F01	2.0
29. Superficial injury of lower leg	S80	2.0
30. Cellulitis	L03	2.0
31. Blindness and low vision	H54	1.9
32. Deficiency of other B group vitamins	E53	1.9
33. Problems related to social environment	Z60	1.8
34. Parkinson's disease	G20	1.8
35. Syncope and collapse	R55	1.8
36. Fracture of rib(s), sternum and thoracic spine	S22	1.8
37. Other functional intestinal disorders	K59	1.8
38. Acute renal failure	N17	1.8
39. Decubitus ulcer	L89	1.7
40. Carrier of infectious disease	Z22	1.7
41. Streptococcus and staphylococcus as the cause of diseases classified to other chapters	B95	1.7
42. Ulcer of lower limb, not elsewhere classified	L97	1.6
43. Other symptoms and signs involving general sensations and perceptions	R44	1.6
44. Duodenal ulcer	K26	1.6
45. Hypotension	I95	1.6
46. Unspecified renal failure	N19	1.6
47. Other septicemia	A41	1.6
48. Personal history of other diseases and conditions	Z87	1.5
49. Respiratory failure, not elsewhere classified	J96	1.5
50. Exposure to unspecified factor	X59	1.5
51. Other arthritis	M19	1.5
52. Epilepsy	G40	1.5
53. Osteoporosis without pathological fracture	M81	1.4
54. Fracture of femur	S72	1.4
55. Fracture of lumbar spine and pelvis	S32	1.4
56. Other disorders of pancreatic internal secretion	E16	1.4
57. Abnormal results of function studies	R84	1.4
58. Chronic renal failure	N18	1.4
59. Retention of urine	R33	1.3
60. Unknown and unspecified causes of morbidity	R69	1.3
61. Other disorders of kidney and ureter, not elsewhere classified	N28	1.3
62. Unspecified urinary incontinence	R32	1.2

63. Other degenerative diseases of nervous system, not elsewhere classified	G31	1.2
64. Nosocomial condition	Y95	1.2
65. Other and unspecified injuries of head	S09	1.2
66. Symptoms and signs involving emotional state	R45	1.2
67. Transient cerebral ischaemic attacks and related syndromes	G45	1.2
68. Problems related to care-provider dependency	Z74	1.1
69. Other soft tissue disorders, not elsewhere classified	M79	1.1
70. Fall involving bed	W06	1.1
71. Open wound of head	S01	1.1
72. Other bacterial intestinal infections	A04	1.1
73. Diarrhea and gastroenteritis of presumed infectious origin	A09	1.1
74. Pneumonia, organism unspecified	J18	1.1
75. Pneumonitis due to solids and liquids	J69	1.0
76. Speech disturbances, not elsewhere classified	R47	1.0
77. Vitamin D deficiency	E55	1.0
78. Artificial opening status	Z93	1.0
79. Gangrene, not elsewhere classified	R02	1.0
80. Symptoms and signs concerning food and fluid intake	R63	0.9
81. Other hearing loss	H91	0.9
82. Fall on and from stairs and steps	W10	0.9
83. Fall on same level from slipping, tripping and stumbling	W01	0.9
84. Thyrotoxicosis [hyperthyroidism]	E05	0.9
85. Scoliosis	M41	0.9
86. Dysphagia	R13	0.8
87. Dependence on enabling machines and devices	Z99	0.8
88. Agent resistant to penicillin and related antibiotics	U80	0.8
89. Osteoporosis with pathological fracture	M80	0.8
90. Other diseases of digestive system	K92	0.8
91. Cerebral infarction	I63	0.8
92. Calculus of kidney and ureter	N20	0.7
93. Mental and behavioral disorders due to use of alcohol	F10	0.7
94. Other medical procedures as the cause of abnormal reaction of the patient	Y84	0.7
95. Abnormalities of heart beat	R00	0.7
96. Unspecified acute lower respiratory infection	J22	0.7
97. Problems related to life-management difficulty	Z73	0.6
98. Other abnormal findings of blood chemistry	R79	0.6
99. Personal history of risk-factors, not elsewhere classified	Z91	0.5
100. Open wound of forearm	S51	0.5
101. Depressive episode	F32	0.5
102. Spinal stenosis (secondary code only)	M48	0.5
103. Disorders of mineral metabolism	E83	0.4
104. Polyarthrosis	M15	0.4
105. Other anaemias	D64	0.4
106. Other local infections of skin and subcutaneous tissue	L08	0.4
107. Nausea and vomiting	R11	0.3
108. Other noninfective gastroenteritis and colitis	K52	0.3
109. Fever of unknown origin	R50	0.1

Table 2. Differences in outcomes based on the presence of Frailty

	No Frailty % (No.)	Frailty % (No.)	Adjusted Odds Ratio (aOR) or Mean Difference (aMD)	95% Confidence Interval (95%CI)
Total number of cases	41% (545)	59% (785)	N/A	N/A
Mortality	3.67%	18.5%	8.93	1.79 - 44.74
Length of Stay	5.1	7.1	2.5	1.2 - 3.8
Total Healthcare Charges	67,296	87,209	22,541	2,175 - 42,908

*Odds ratio and Mean Difference adjusted for age, race, income, insurance status, hospital characteristics, and comorbid conditions

Figure 1

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