

acknowledgement

We would thank Ian Tannock for helpful discussion and editing of the manuscript.

disclosure

GR receives honoraria for contribution to regional board and oral communication for symposium, NH receives honoraria for contribution to national board, MG-G receives honoraria for contribution to regional board, Paul Sargos receives honoraria for oral communication for symposium, Pierre Richaud receives honoraria for contribution to advisory board. All remaining authors have declared no conflicts of interest.

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doi: 10.1093/annonc/mdu132

Published online 1 April 2014

Incidence of bowel perforation in gastrointestinal lymphomas by location and histology

We recently reported a 9% incidence of bowel perforation in our cohort of 1062 patients with biopsy-proven GI involvement with lymphoma [1]. Among the 100 perforation events, the small bowel was the most common site of perforation and diffuse large B-cell lymphoma (DLBCL) was the most common histology. The risk of perforation seems to vary by both the site of involvement as well as the type of lymphoma. Herein, we report additional data from the same cohort of patients regarding site-specific incidence of perforation, stratified by lymphoma histology (Table 1).

Among the 1062 GI lymphomas in our series, the stomach was the most frequent site of involvement (44%), followed by the colon/rectum (25%), small bowel (24%) and duodenum (7%). The esophagus was the least frequently involved (<1%). Overall, DLBCL was the most frequent histology (39%) and was associated with the highest frequency of perforations (13.2%), whereas mucosa-associated lymphoid tissue (MALT) lymphoma, the next most frequent histology (21%), was associated with a much lower risk of perforation (1.8%). In general, low-grade lymphomas perforated less frequently than their high-grade counterparts, irrespective of the site of involvement. For example the frequency of perforation was 6% with gastric DLBCL compared with 0.6% with gastric MALT, and 13.2% with colorectal DLBCL compared with 0% with colorectal MALT. However, the site of involvement is also important in determining the risk of perforation, and may be related to the thickness of the involved bowel wall. MALT lymphomas in the small bowel had a higher risk of perforation

Table 1 . Incidence of bowel perforation in gastrointestinal (GI) lymphoma stratified by location of involvement and histology

Histology	Gastric		Duodenum		Small Bowel		Colon/ Rectum	
	Involved, N = 465	Perforated, N = 16 (3.4%)	Involved, N = 73	Perforated, N = 7 (9.6%)	Involved, N = 252	Perforated, N = 52 (20.6%)	Involved, N = 262	Perforated, N = 22 (8.4%)
B-cell aggressive, n (%)								
Large B-cell	215 (46.2)	13 (6)	18 (24.7)	4 (22)	87 (34.5)	27 (31)	91 (34.7)	12 (13.2)
High-grade B-cell, unclassifiable	4 (0.9)	0	1 (1.4)	0	10 (4)	3 (30)	9 (3.4)	1 (11.1)
Burkitts	3 (0.6)	0	1 (1.4)	0	7 (2.8)	0	3 (1.1)	0
Follicular, grade 3A	1 (0.2)	0	0	0	5 (2)	0	2 (0.8)	0
Mantle cell	21 (4.5)	1 (4.8)	5 (6.8)	0	13 (5.2)	1 (7.7)	55 (21)	0
B-cell indolent, n (%)								
MALT lymphoma	176 (37.8)	1 (0.6)	5 (6.8)	1 (20)	17 (6.7)	2 (11.8)	23 (8.8)	0
Follicular, grade 1	5 (1.1)	0	30 (41.1)	1 (3.3)	54 (21)	1 (1.9)	17 (6.5)	1 (5.9)
Follicular, grade 2	2 (0.4)	0	3 (4.1)	0	8 (3.2)	0	7 (2.7)	0
Small lymphocytic	16 (3.4)	0	1 (1.4)	0	0	0	15 (5.7)	0
T cell, n (%)	7 (1.5)	1 (14.3)	1 (1.4)	0	31 (12.3)	11 (35.5)	7 (2.7)	0
Others, n (%)	11 (2.4)	0	4 (5.5)	0	5 (2)	2 (40)	16 (6.1)	3 (18.8)
PTLD, n (%)	4 (0.9)	0	4 (5.5)	1 (25)	15 (6)	5 (33.3)	17 (6.5)	5 (29.4)

Others: lymphoma unclassified, Hodgkin, Lymphoplasmacytic lymphoma.

Site of perforation was distal esophagus in one patient and unknown in 2 patients (who transitioned to hospice after demonstration of free air in the abdomen on computed tomography imaging).

MALT, Marginal zone B-cell lymphoma of mucosa-associated lymphoid tissue; PTLT, post-transplant lymphoproliferative disorder.

(11.8%) compared with those involving the stomach (0.6%). Similarly, DLBCL involving the small bowel had a higher risk of perforation (31%) compared with gastric DLBCL (6%). T-cell lymphomas and post-transplant lymphoproliferative disorder seem to carry a high risk of perforation, irrespective of the site of involvement.

Our data suggest that low-grade B-cell lymphomas involving the stomach carry the lowest risk of perforation, and high-grade B-cell lymphomas involving the small bowel are at a high risk of perforation. The low rate of perforation with gastric lymphomas is similar to that quoted by other series [2, 3], and supports our current approach of upfront chemotherapy rather than surgical resection. The decision to resect a small-bowel lymphoma is more complex, and depends on factors such as extent of involvement, pace of tumor growth and complications of obstruction or hemorrhage. Knowledge of the potential risk of perforation in GI lymphomas may help clinicians make guided treatment decisions and counsel patients accordingly.

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funding

Supported in part by University of Iowa/Mayo Clinic SPORE CA97274 and the Predolin Foundation.

disclosure

The authors have declared no conflicts of interest.

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doi: 10.1093/annonc/mdu135

Published online 1 April 2014