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POSTER ABSTRACTS

623.MANTLE CELL, FOLLICULAR, AND OTHER INDOLENT B CELL LYMPHOMAS: CLINICAL AND EPIDEMIOLOGICAL

Clinicopathologic Features and Survival Outcomes of Extranodal Marginal Zone Lymphoma of Mucosa-Associated Lymphoid Tissue (MALT Lymphoma) of the Urothelial Organs (Urologic MALT Lymphoma): The Mayo Clinic Experience (2013-2022)

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Introduction:
Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) is a low-grade B cell non-Hodgkin lymphoma that originates in lymphoid tissue of epithelial lined structures. The commonest site for this lymphoma is the stomach (gastric MALT lymphoma). MALT lymphoma in other mucosal sites, including other gastrointestinal sites, lungs, salivary glands, and lacrimal glands, has been well-described. However, MALT lymphoma in urothelial organs (kidneys, ureters, and urinary bladder) has not been well-characterized. This study aimed to investigate the clinicopathological features and therapeutic outcomes in urologic MALT lymphoma (U-MALT).

Methods:
We identified patients with U-MALT who were treated at the Mayo Clinic Cancer Center between March 2013 and May 2022 through electronic medical chart review. Clinical, pathologic, radiologic, therapeutic, and survival data were extracted. Kaplan-Meier analysis was used to determine the survival outcomes.

Results:
The characteristic features of six patients (N=6) with U-MALT are summarized in Table-1. 4/6 (67%) are Caucasian, and 3/6 (50%) are males. The median age at diagnosis was 73.5 years. Urologic sites are the urinary bladder (3/6), kidneys (3/6), and ureter (1/6, this patient had both kidney and ureter involvement). 4/6 patients had primary U-MALT. Concurrent non-urologic involvement was identified in 3/6 patients and included bone marrow, lungs, stomach, and axillary lymph nodes. Bone marrow involvement was observed in 2/6 patients.Next-generation sequencing was performed on one patient's peripheral blood, revealing an ATM mutation. Regarding the initial clinical presentation, kidney-involved U-MALT patients presented with renal failure, and those with urinary bladder/ureteric involvement, U-MALT was diagnosed incidentally upon cystoscopic evaluation and biopsy. Various management strategies were used, including observation, surgical resection, and rituximab treatment. Notably, all patients achieved complete remission (CR) except one with partial response to rituximab, who subsequently achieved CR with the Bendamustine/Rituximab regimen. Median follow-up is 6 years (range, 1-10). All six patients are alive without relapse at the time of analysis, with the flat overall survival curve at 100%, indicating excellent long-term survival.

Conclusions:
Our study indicates that urologic MALT lymphomas are extremely rare and predominantly affect elderly people. The most common urologic sites are the kidneys and urinary bladder. Urologic manifestations are dependent on the urologic site involved. They can be primary to the urologic structures or part of the disseminated systemic marginal zone lymphoma. They can be treated like other low-grade lymphomas with observation, surgical resection, and systemic therapy. They appear to be quite responsive to CD-20 targeted therapy with Rituximab. Prognosis appears to be excellent with long overall survival. Further research with multi-institutional studies is needed to study this rare lymphoma entity and identify optimal therapy.

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Variables	No. (%), or Median [range]
Characteristics at the time of diagnosis	
Age, Years	73.5 [67-76]
Male	3 (50)
Caucasian	4 (67)
Hemoglobin, g/dL	12.9 [7.5-13.6]
WBC, x 10^9/L	6.1 [4.3-9.3]
Absolute Lymphocyte Count, x 10^9/L	1.7 [1-2.1]
Platelet, x 10^9/L	196 [167-264]
Lactate Dehydrogenase, U/L	191 [136-363]
Albumin, g/dL	4.3 [3.9-4.5]
Bone Marrow Involvement at Diagnosis	2 (33)
Type of Urothelial Organ Involved	
Urinary Bladder	3 (50)
Kidneys	3 (50)
Ureters	1 (17)
Cytogenetics at diagnosis (n=4)	
Diploid	3 (75)
Trisomy 12	1 (25)
Management Approach in the First Line	
Observation	2 (33)
Surgical Excision	1 (17)
Rituximab	3 (50)
Response to Rituximab	
Complete Remession	2 (67)
Partial Response	1 (33)
Median Follow up, Years	6 [1-10]
Median OS, Years	Not reached

Table-1: Baseline patients' characteristics, treatment modalities, and response to treatment.

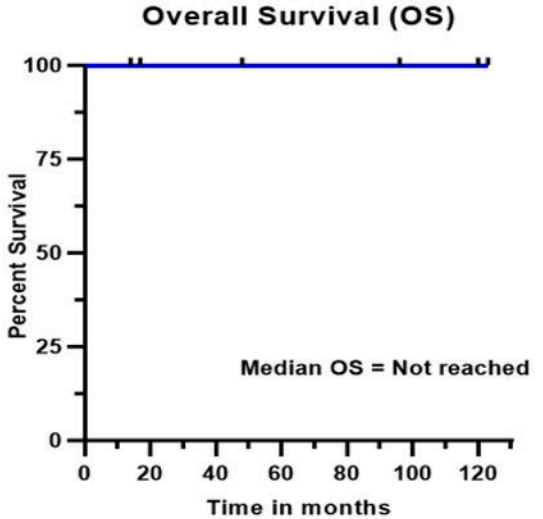

Figure-1: OS for patients with U-MALT

Figure 1