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Clinical Characteristics and Outcomes of AL Amyloidosis Patients in Saskatchewan: A Population-based Cohort Study

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Introduction

Amyloidosis is a group of rare disorders caused by extracellular deposition of misfolded proteins as amyloid fibrils.

The primary or amyloid light chain (AL) type involves monoclonal immunoglobulin light chain fibrils that misfold and accumulate in various tissues, causing organ damage.

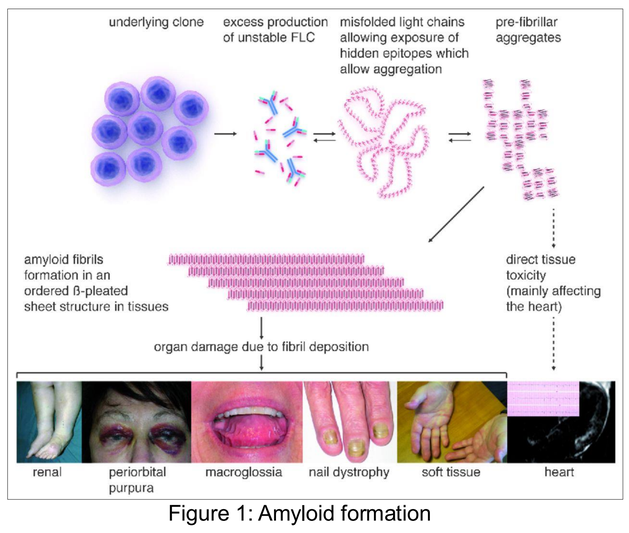

Figure 1: Amyloid formation

Currently, there are no published data detailing the presentation, treatment patterns, and outcomes of AL amyloidosis in Saskatchewan.

Purpose of this study:

Aim 1: Address this gap by shedding light on patient characteristics and treatment outcomes

Aim 2: Improve care for individuals with AL amyloidosis in this region.

To aim this objectives, we conducted a retrospective chart review of AL amyloidosis patients treated at the Saskatchewan Cancer Agency (2010–2023).

Results

There were 32 males and 15 females in this analysis and the mortality analysis showed that 17 out of 32 males (46.9%) and 9 out of 15 females (40%) died, resulting in a total mortality rate of 44.7% for the entire cohort

Table 1: Patients Characteristic

Patients Characteristic	Overall (N=47)
Patients	47
Age at the time of diagnosis (mean ± SD), year	66.5 ± 13.6
Male - no (%)	32 (68.1)
Female - no (%)	15 (31.9)

The most Common Comorbidities:
Renal disease: 46.8%
Diabetes: 47.1%

The most Organ Involvement:
Kidney: 51.1%
Heart: 27.7%

ECOG Status Analysis:
Fully active (ECOG 0): 25.5 %
Minor limitations (ECOG 1): 404.4 %
Less active (ECOG 2): 17.0%
Severe disability (ECOG 3+): 12.8%

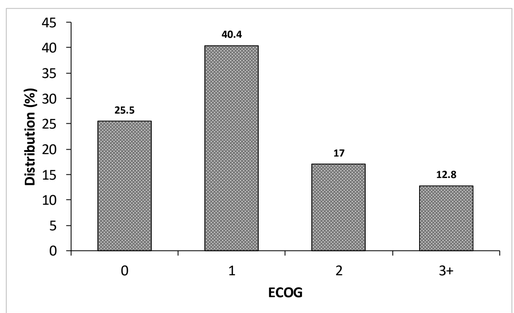

Figure 2: ECOG status

Type of treatment:
Chemotherapy: 74.5%
Surgical excision: 6.4%
Radiotherapy: 10.6%
Bone marrow transplantation: 6.4%

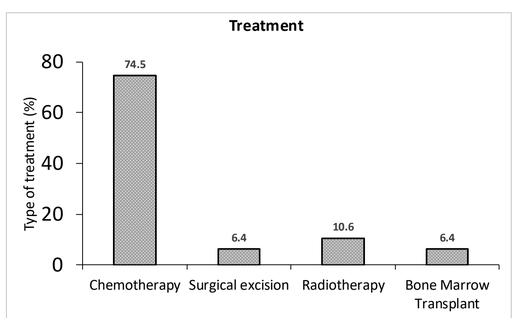

Figure 3: Type of treatment

Table 2: Type of chemotherapy

Chemotherapy	N (%)
1st Line pharmacologic therapy (%)	**35 (74.5)**
CyBorD	21 (60)
Bortezomib and Dexamethasone	8 (22.8)
Other Bortezomib-based regimen	1 (2.9)
RevDex (Lenalidomide and dexamethasone)	1 (2.9)
Other	4 (11.4)
2nd Line pharmacologic therapy (%)	**13 (27.7)**
CyBroD	1 (7.7)
CyBorD and Daratumumab	1 (7.7)
Daratumumab, Lenalidomide and Dexamethasone	1 (7.7)
Bortezomib and Dexamethasone	3 (23.1)
RevDex (Lenalidomide and dexamethasone)	1 (7.7)
Other	6 (46.2)
3rd Line pharmacologic therapy (%)	**3 (6.4)**
Bortezomib and Dexamethasone	1 (33.3)
Other	2 (66.7)

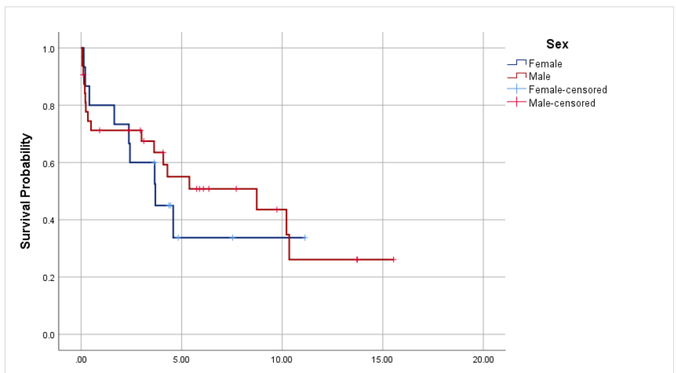

Figure 4: Kaplan-Meier curve based on gender in AL amyloidosis Patients

Table 3: Mean Survival time for Al Amyloidosis patients

Mean Survival	Years
Male	5.3
Female	7.4
Chemotherapy	4.5
Radiotherapy	5.9
Surgical excision	10.4
Bone marrow transplant	5.2

Conclusion

This study provides important information on:

- The epidemiological data on AL amyloidosis in Saskatchewan
- Highlights the need for early diagnosis.
- Increasing the use of novel therapies may help to improve survival outcomes.

These findings can inform provincial health policies and the development of tailored guidelines to improve patient care.

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