

# CHARACTERISTICS OF PAIN DURING ACUTE LEUKEMIA INDUCTION CHEMOTHERAPY

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## INTRODUCTION

Acute leukemia (AL) is a hematopoietic stem cell malignancy associated with substantial morbidity and mortality<sup>1,2</sup>, yet patients are uncommonly referred to palliative care<sup>3</sup>. The prevalence, correlates and causes for pain in this population have not been well studied. We present a large cross-sectional study of pain in individuals with AL.

## METHODS

Patients were recruited from a tertiary referral center for leukemia at Princess Margaret Cancer Centre, University Health Network, Toronto, from January 2008 to October 2013.

**Eligibility:** Patients over 18 with a new diagnosis or relapse of AL undergoing induction chemotherapy within the past 46 days.

**Measures:** Age, gender, marital status, living arrangements, education, employment status, average family income, past psychiatric history, disease type, disease status, functional status, type of treatment received and number of days from treatment until time of study assessment were recorded.

Symptom burden was assessed using the 32-item Memorial Symptom Assessment Scale (MSAS). Incidence and reasons for referrals to palliative care were determined from the Palliative Care database. Site of pain was determined for patients with severe pain by medical chart review for the week prior to MSAS completion by two independent investigators.

## RESULTS

- 153/313 (49%) patients suffered from pain, 55/313 (17.5%) suffered severe pain.

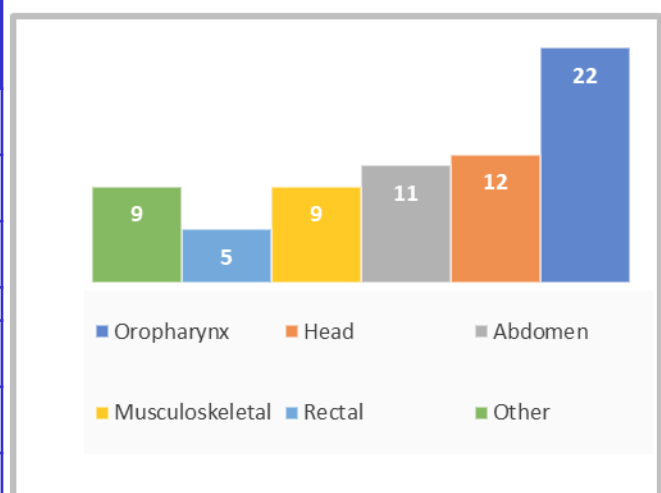
Table 1: Participant and disease characteristics (N=313)

Variable	Number (%)	Variable	Number (%)
Age in years, Mean ± SD	49.1 ± 15.7	<b>Chemotherapy protocol</b>	
Male	170 (54.3%)	ALL	69 (22.0%)
Married/Common law	222 (70.9%)	AML/APL standard (7+3)	207 (66.1%)
Living alone	37 (11.9%)	AML/APL intense	31 (9.9%)
College/University education	223 (71.7%)	AML/APL others	4 (1.3%)
Employment status		Psychiatric history	35 (11.2%)
Employed	163 (52.2%)	<b>Karnofsky performance status</b>	
Student/Retired	101 (32.4%)	40	2 (0.6%)
Unemployed/On disability	48 (15.4%)	50	4 (1.3%)
Mean household income		60	60 (19.2%)
≤29,999\$	34 (14.1%)	70	159 (50.8%)
30-59,999\$	73 (30.3%)	80	60 (19.2%)
≥60,000\$	134 (55.6%)	90	25 (8.0%)
Not answered	72 (23.0%)	100	3 (1.0%)
Disease type		<b>Time from chemotherapy to assessment (days)</b>	
Acute myeloid leukemia	211 (67.4%)	1-7	46 (14.7%)
Acute lymphocytic leukemia	70 (22.4%)	8-14	78 (24.9%)
Acute promyelocytic leukemia	32 (10.2%)	15-21	99 (31.6%)
Disease status		22-28	62 (19.8%)
New onset	287 (91.7%)	29-56	28 (8.9%)
Relapsed	26 (8.3%)		

Table 2: Factors associated with level of pain (multivariable analysis)

Variable	Not Severe vs. No pain OR (95%CI)	Severe vs. No Pain OR (95%CI)	P-value
Age, year	0.98 (0.96-0.998)	0.96 (0.94-0.99)	0.002
KPS	0.98 (0.95-1.01)	0.96 (0.92-0.99)	0.048
Living with others	4.13 (1.34-12.8)	0.92 (0.34-2.47)	0.04
Disease type			0.02
AML	0.36(0.15-0.87)	1.41 (0.36-5.61)	
ALL	0.52(0.19-1.41)	2.97 (0.71-12.42)	
Time from chemotherapy	0.98 (0.95-1.01)	1.02 (0.99-1.06)	0.052

Figure 1: Pain Location in Patients with Severe Pain (N=55)



## CONCLUSIONS

Pain is prevalent and distressing in patients with AL who are undergoing induction chemotherapy. Severe pain is localised primarily to oropharynx, head and abdomen. Pain is associated with younger age, better Karnofsky performance status, living with others, AML, and time from chemotherapy. Further studies could address the role of supportive care interventions in this patient population.

## REFERENCES

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