

Correlation between age, gender, primary tumor site, metastatic spread, and opioid use in terminal cancer



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Introduction

- Between 65% and 85% of cancer patients have pain during the course of their disease with 78% directly related to the tumor
- Opioids analgesics are a mainstay in the treatment of moderate to severe pain for terminal cancer patients
- The literature reveals enormous variations in the mean daily doses in this population
- Several different factors have been reported to possibly influence opioid intake in end of life such as age, primary tumor site, gender, and performance status. However, only a few studies reported an association between these factors and daily opioid doses.

Objective

- The aim of this study is to describe opioid intake and associated factors in terminally ill cancer patients.

Methods

- All cancer patients admitted in one of the 7 participating centers between October 2001 and December 2004 were included in this study. Therefore, 2021 patients were included in the study; representing over 50000 patients/days.
- Data on medication were collected daily from admission until patient's death
- Opioid doses were converted in subcutaneous morphine equivalent units

Results

Table 1 - Statistics of PRDP medications administrated

Primary Site	N	Average Age	% male	% metastatic spread	Mean opioids daily dose (mg)
Lips, oral cavity and pharynx	45	63.9	66.7	33.3	162.6
Other respiratory system and thoracic organ	35	66.3	71.4	54.3	143.4
Lungs, bronchus and trachea	523	67.4	51.6	75.7	120.5
Colorectal	264	71.1	50.8	92.8	119.6
Prostate	77	76.4	100	40.3	105.1
Others or not specified:	86	69.5	54.1	76.7	101.5
Urogenital	121	71.0	60	76.9	95.5
Breast	193	65.9	1	88.1	91.1
Gynaecological	128	68.1	0	76.4	90.8
Digestive system and pleural	338	71.4	56.2	77.2	87.3
Bone, skin and connective tissue	58	69.4	55.2	69	69.5
Lymphatic tissue and haematopoietic	68	69.3	44.1	44.1	52.0
Glyoblastoma and brain	62	62.4	53.3	56.5	31.9
Overall*	1998	68.9	46.9	74.3	101.9

Nonparametric Wilcoxon test showed a significant difference between daily opioid doses and the primary site of the tumor (p<0.01)

Figure 1. Relation between age and opioid dose

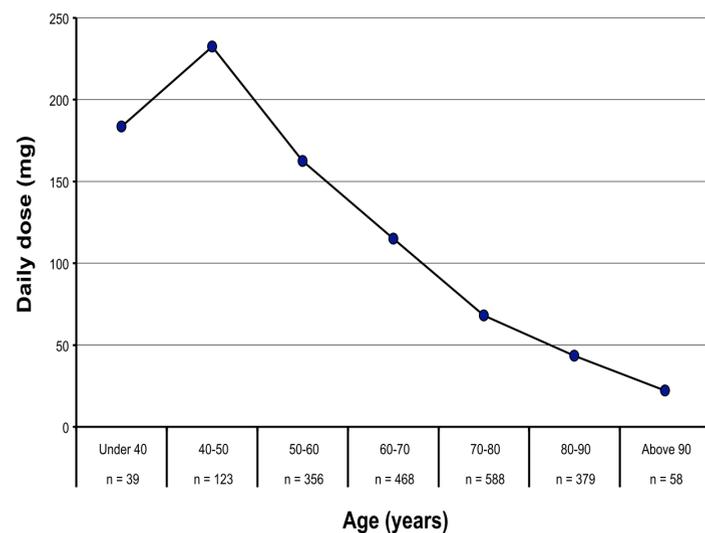


Table 3. Correlation analysis between demographic characteristic and opioid dose

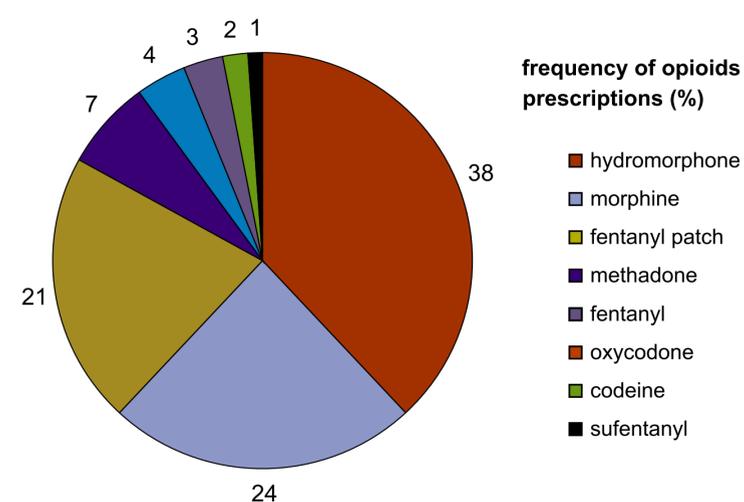
Characteristics	r	P value
Age	-0.33	p<0.001
ECOG	-0.10	p<0.001
Number of invaded metastasis sites	-0.01	p = 0.835

Table 2. Relation between gender, presence of metastasis and ECOG with the daily opioid dose

Characteristics	N (%)	Mean opioid daily dose (mg)
Gender		
Male ^a	945 (47%)	102.3
Female ^a	1060 (53%)	101.4
Metastasis		
Absent ^b	520 (25.7%)	130.3
Present ^b	1501 (74.3%)	91.6
ECOG		
Less than 50% of time confined to bed ^c	165 (8.4%)	120.7
50% of time confined to bed ^c	718 (36.5%)	122.3
Confined to bed ^c	1085 (55.1%)	86.7

a: The difference was not significant (p= .942)
 b: The difference between the presence or absence of metastasis was statistically significant (p < 0.01)
 c: The difference between the ECOG score was statistically significant (p = 0.01)

Figure 2. Overall frequency of opioids prescriptions in terminally ill cancer patients (%).



Conclusions

- In this cohort of terminally ill cancer patients, higher opioid intake was significantly associated with younger age, absence of metastasis, and better performance status
- Age was the best predictor of higher opioid doses
- Patients aged between 40 and 50 used the highest doses of opioids
- Hydromorphone was the most frequently used opioid, followed by morphine and fentanyl
- There was no difference between male and female opioid prescription profiles

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