An exploration of medical emergency team response at the end-of-life for people with advanced cancer

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Introduction

Medical Emergency Teams (METs) were introduced into hospitals to respond and treat acutely unwell ward patients.[1]

Clinical deterioration is also present in the dying patient where aggressive treatment may not be in the best interest on the patient.[2]

Recent studies have reported end-of-life care as being a considerable proportion of the role of a MET.[3,4]

Study purpose

To explore patterns of care experienced by two cohorts of patients with advanced cancer within their last week of life;

- those who experienced at least one MET call and,
- those who did not experience a MET call.

The literature

The literature was searched under two themes,

- MET involvement in end-of-life care and,
- specific interventions that impact quality of death.

Quality of death indicators

Positive indicators:

- medical discussion regarding end-of-life
- completion of an NFR or LOMT order
- palliative care medical team involvement in end-of-life care
- initiation of a Liverpool Care Pathway (LCP)
- admission into a single hospital room
- pain management
- comfort management
- symptom management

Quality of death indicators

Negative indicators:

- ICU admission,
- chemotherapy administration,
- poor pain control,
- patient distress or agitation,
- active medical management (within 48hours of death) in the form of blood tests.

Method

Retrospective review of all available medical records (electronic and written).

One hundred patients who died in hospital over a three year period (2010 – 2012), 50 randomised to each group.

Occurrence of positive and negative quality of death indicators over the last 7 days of life.

Results – patient characteristics

Patient characteristics	MET cohort n=50	Non-MET cohort n=50	p-value*
Hospital length of stay			
Mean (SD)	11.0 (8.3)	15.6 (15.0)	0.059
Median (IQR)	9.0 (5.0, 13.0)	9.5 (6.3, 19.0)	
Median age at death	66	67	
Range	35, 89	36, 90	
	(n) %	**(n) %**	
Sex			
Men	27 (54)	32 (64)	
Women	23 (46)	18 (36)	
Location at death			
Ward	38 (76)	46 (92)	**0.029**
Intensive Care Unit	12 (24)	4 (8)	

*Mann-Whitney U test

Quality of death score

One point for each positive quality of death indicator received.

One point for each negative quality of death indicator not received.

Higher quality of death score indicates a greater quality of death, maximum of 12 points.

Quality of death scores

Quality of death scores:

	n	mean (SD)	Median (IQR)	Range	p-value*
MET cohort	50	8.8 (2.1)	9.0 (8.0, 10.3)	5, 12	
Non-MET cohort	50	9.8 (1.7)	10.0 (9.0,11.0)	6, 12	**0.011**

Note. * Mann-Whitney U test

Non-MET cohort patients had significantly higher quality of death scores than patients from the MET cohort (p=0.011)

MET cohort subgroups

The MET cohort was further divided into subgroups where:

- end-of-life care was directly influenced by the MET (MET influenced) 38% (n=19) and,
- end-of-life care was not directly influenced by the MET (MET not influenced).

MET cohort subgroups

MET call characteristics between subgroups:

Characteristic	MET influenced n=19	MET not influenced n=31	p-value*
	(n) %	(n) %	
Location of MET call			
Ward	19 (100)	29 (94)	0.258
Clinical reason for MET			
HR > 130 bpm	3 (16)	9 (29)	0.299
SBP < 90 mmHg	2 (11)	3 (10)	
RR > 30 bpm	1 (5)	3 (10)	
O_2 sat < 90%	5 (26)	3 (10)	
Altered consciousness	7 (37)	7 (23)	
Initial outcome*			
Remained on ward	18 (95)	15 (48)	**0.010**
Admission to ICU	1 (5)	12 (39)	
Deceased		3 (10)	

*Within 6 hours of MET call

Quality of death scores

Quality of death scores across subgroups:

	n	mean (SD)	Median (IQR)	range	p-value*
MET influenced	19	9.6 (1.6)	9.0 (9.0, 11.0)	8, 12	**0.017**
MET not influenced	31	8.2 (2.2)	9.0 (6.0, 9.0)	5, 12	

Note. * Mann-Whitney U test

The MET influenced subgroup had significantly higher quality of death scores than the MET not influenced subgroup (p=0.017).

MET subgroups

ICU admission was the most notable difference between MET subgroups (p=0.003):

- 5% (n=1) of the MET influenced subgroup, versus
- 45% (n=14)* of the MET not influenced subgroup.

65% (n=9)^ of the MET not influenced subgroup who were admitted to ICU, died in ICU.

Discussion

The variable most often influenced by the MET was a family meeting and end-of-life discussion.

- This occurred in nearly half of the MET influence subgroup
- The ICU consultant was in attendance for two-thirds of these MET calls

The ICU consultant brings not only expertise in the diagnosis and communication of imminent end of life.[5]

Conclusion

In this study, ICU admission was found to be a significant difference between the two subgroups and contributed to the lower quality of death score found in the MET not influenced subgroup.

When senior medical staff are in attendance, end-of-life care discussion were more prevalent and ICU admission was less prevalent.

Conclusion

Advances in cancer medicine have offered patients the ability to live longer with advanced disease. But with these advances comes complex choices as end of life nears, especially when acute events require rapid decision-making.

Data from this study suggest early involvement of palliative care physicians in the care of patients with advanced cancer is essential to ensure timely end of life decision-making, in acute care settings.

Appendix A – Met call articles

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Appendix B – End-of-life care articles

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