



The incidence of severe oral mucositis and taste disturbance in patients undergoing different haematopoietic stem cell transplantation regimens

Midori Nakagaki^{1,2}, Glen A Kennedy^{1,2}, Nicole Gavin^{1,3}, Alexandra Clavarino², Karen Whitfield^{1,2} ¹Royal Brisbane and Women’s Hospital, ²The University of Queensland, ³Queensland University of Technology

Background

Oral Mucositis (OM) is a common complication during haematopoietic stem cell transplantation (HSCT). Incidence and severity of OM are affected by patient- and treatment-related risk factors. Taste disturbance is also common in HSCT.

Aims

To review the incidence of severe OM and taste disturbance in patients undergoing different HSCT regimens

Methods

- A single centre, retrospective study (2017-2020)
- Daily OM Grade (WHO scale) were reviewed and incidence of grade 3-4 OM (ulcers, tolerates liquid food only) was assessed for each regimen.
- Use of Total Parenteral Nutrition (TPN) and Patient Controlled Analgesia (PCA) were reviewed.
- The presence of taste changes/ loss were reviewed.
- Gender, age and BMI were reviewed in FluMel patients.
- All patients received cryotherapy with melphalan, saline and sodium bicarbonate mouthwashes.

Results

- 467 patients were included (19 patients received miscellaneous regimens are not included in Table 1)
- Grade 3-4 mucositis was common in myeloablative TBI based regimens, followed by FluMel and BEAM. TPN/PCA were commonly used in patients receiving these regimens (Table 1)
- Comparing similar regimens (CyTBI vs FluTBI (PTCy), FluMel vs MelFluTBI(PTCy), MTX is associated with higher OM risk.
- Taste disturbance was common in all regimens (Table 1)
- OM, TPN/PCA uses were more common in females (Figure 1)
- BMI and age did not affect OM severity (Table 2)

Table 1. HSCT regimens, Incidence of Grade 3-4 OM, TPN use, PCA use and incidence of taste disturbance

Regimen	intensity	N	TBI Gy	Mel mg/m ²	Flu mg/m ²	Cy mg/kg	MTX mg/m ²	G3-4 OM (%)	TPN (%)	PCA (%)	Taste (%)
CyTBI	MAC	76	12			120	45	71	67	75	95
FluTBI (PTCy)	MAC	13	12		90	100		46	75	69	85
FluMel	RIC	197		120	125		45	43	42	39	87
BEAM	Auto	34		140	(+ carmustine, etoposide, ara-C)			41	18	41	94
HDM	Auto	76		200				26	7	21	88
MelFluTBI (PTCy)	RIC	27	2	100	160	100		19	13	15	93
FluCy	NMC	11			125	120	45	9	0	0	82
FluCyTBI (PTCy)	NMC	7	2		150	129		0	0	0	71
FluTBI mini	NMC	7	2		90			0	0	0	86

PTCy: post-transplant cyclophosphamide, MAC: myeloablative, RIC: reduced intensity, NM: non-myeloablative, TBI: Total Body Irradiation, Mel: Melphalan, Flu: fludarabine, Cy: cyclophosphamide, MTX: methotrexate

Figure 1. Gender and OM

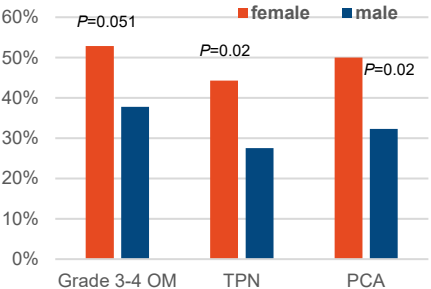


Table 2. BMI and age (NS)

OM grade	N	Median BMI	Median age
0	23	27	59
1	40	26	61
2	49	27	59
3	51	26	60
4	34	28	60

Conclusions

- Severe OM was associated with myeloablative TBI, methotrexate and high dose melphalan in combination with MTX or in BEAM.
- Use of PTCy was preferable over MTX to prevent OM
- Female had higher incidence of severe OM
- Taste disturbance was common with all regimens.