

Incidence of severe oral mucositis in bone marrow transplant patients receiving different conditioning chemoradiotherapy

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Background

Oral Mucositis (OM) is a common toxicity of conditioning (high dose chemotherapy and total body irradiation) during bone marrow transplant. Incidence and severity of OM are affected by patient- and treatment-related risk factors. These confounding factors are not well controlled in the literature.

Aim

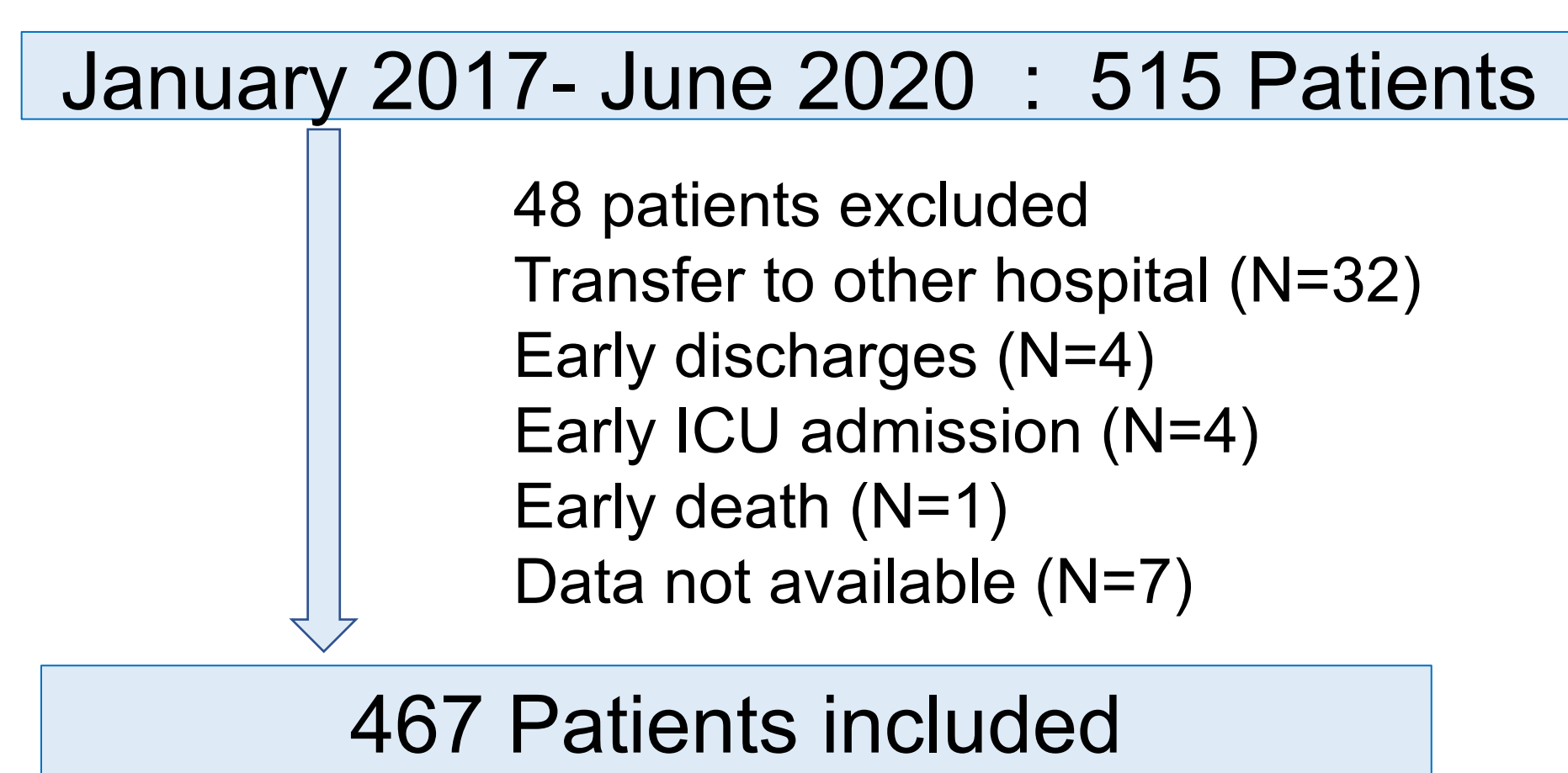
To review the incidence of severe OM in patients undergoing different conditioning regimens, in different gender, age and BMI

Methods

- A single centre, retrospective study (2017-2020)
- Incidence of grade 3-4/ 2-4 OM, use of total Parenteral Nutrition (TPN) and Patient-Controlled Analgesia (PCA) were compared between different conditioning regimens
- Gender, age and BMI were reviewed in patients who received a single regimen (FluMel)
- All patients received cryotherapy with melphalan, saline and sodium bicarbonate mouthwashes

Results

Patients



Conditioning doses (total) and Grade 3-4 OM

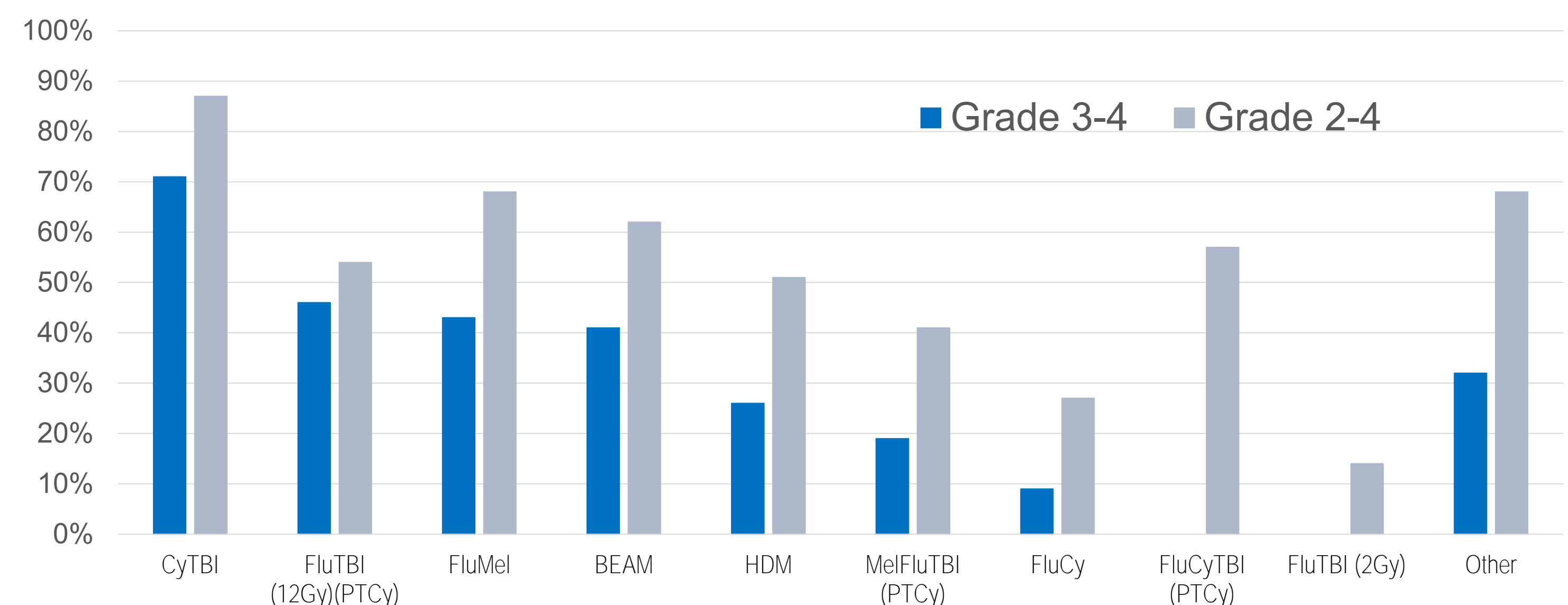
Regimen	intensity	N	TBI Gy	Mel mg/m ²	Flu mg/m ²	Cy mg/kg	MTX mg/m ²	G3-4 OM (%)
CyTBI	MAC	76	12			120	45	71
FluTBI (PTCy)	MAC	13	12		90	100		46
FluMel	RIC	197		120	125		45	43
BEAM	Auto	34		140 (+ carmustine, etoposide, araC)				41
HDM	Auto	76		200				26
MelFluTBI (PTCy)	RIC	27	2	100	160	100		19
FluCy	NMC	11			125	120	45	9
FluCyTBI (PTCy)	NMC	7	2		150	129		0
FluTBI mini	NMC	7	2		90			0

PTCy: post-transplant cyclophosphamide, MAC: myeloablative, RIC: reduced intensity, NM: non-myeloablative, TBI: Total Body Irradiation, Mel: Melphalan, Flu: fludarabine, Cy: cyclophosphamide, MTX: methotrexate, G3-4 OM: grade 3 to 4 oral mucositis

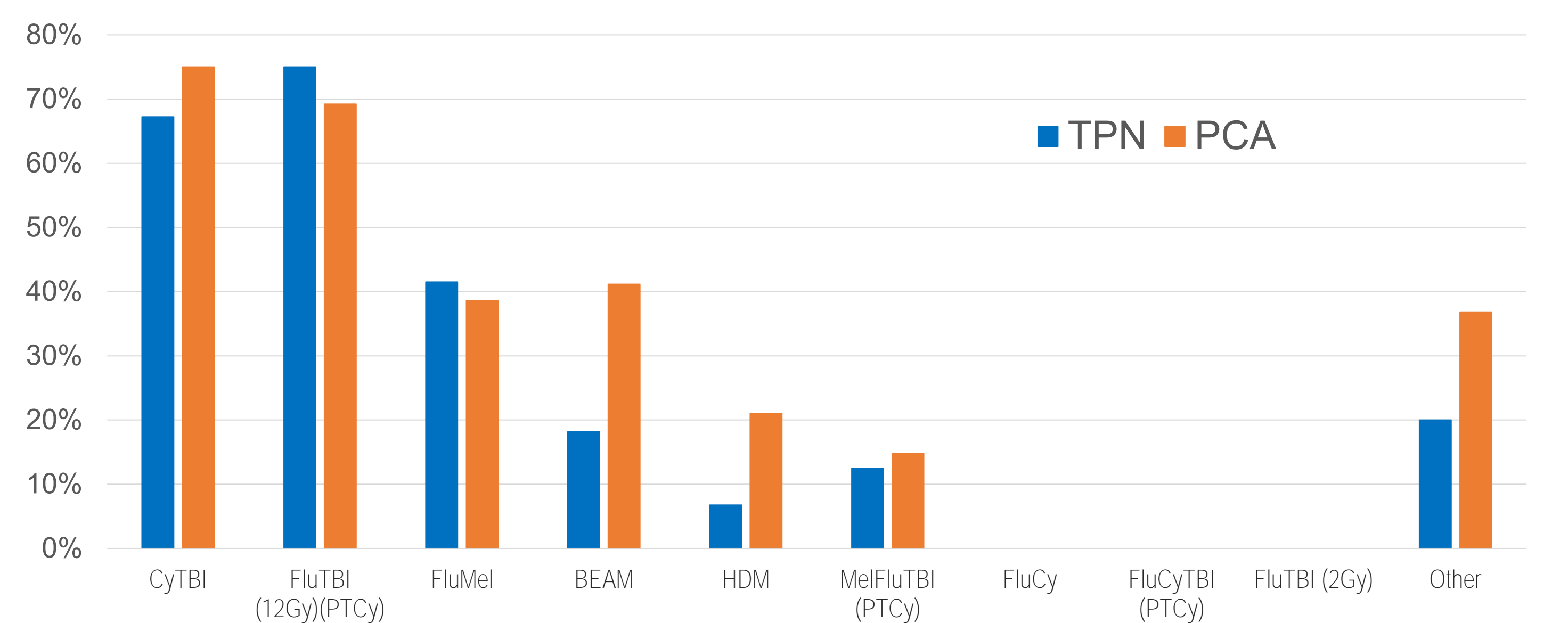
Conditioning schedules (pre-transplant)

CyTBI: Cy 60mg/kg days -5,-4, TBI 2Gy BD on days -3, -2, -1
 FluTBI (PTCy): Flu 30mg/m2 days -7 to -5, TBI 1.5 Gy BD days -4 to -1
 FluMel: Flu 25mg/m2 Days -7 to -3, Mel 120mg/m2 on day -2
 BEAM: Carmustine 300mg/m2 day -6, Cytarabine 200mg/m2 BD days -5 to -2, etoposide 200mg/m2 days -5 to -2, Mel 140mg/m2 day -1
 HDM: Mel 200mg/m2 day -1
 MelFluTBI (PTCy): Mel 100mg/m2 day -6, Flu 40mg/m2 days -5 to -2, TBI 2Gy day -1
 FluCy: Flu 25mg/m2 days -8 to -4, Cy 60mg/kg days -3, -2
 FluCyTBI: Flu 30mg/m2 days -6 to -2, Cy 14.5mg/kg days -6,-5, TBI 2Gy day -1
 FluTBI mini: Flu 30mg/m2 days -4 to -2, TBI 2Gy day -1

Incidence of OM

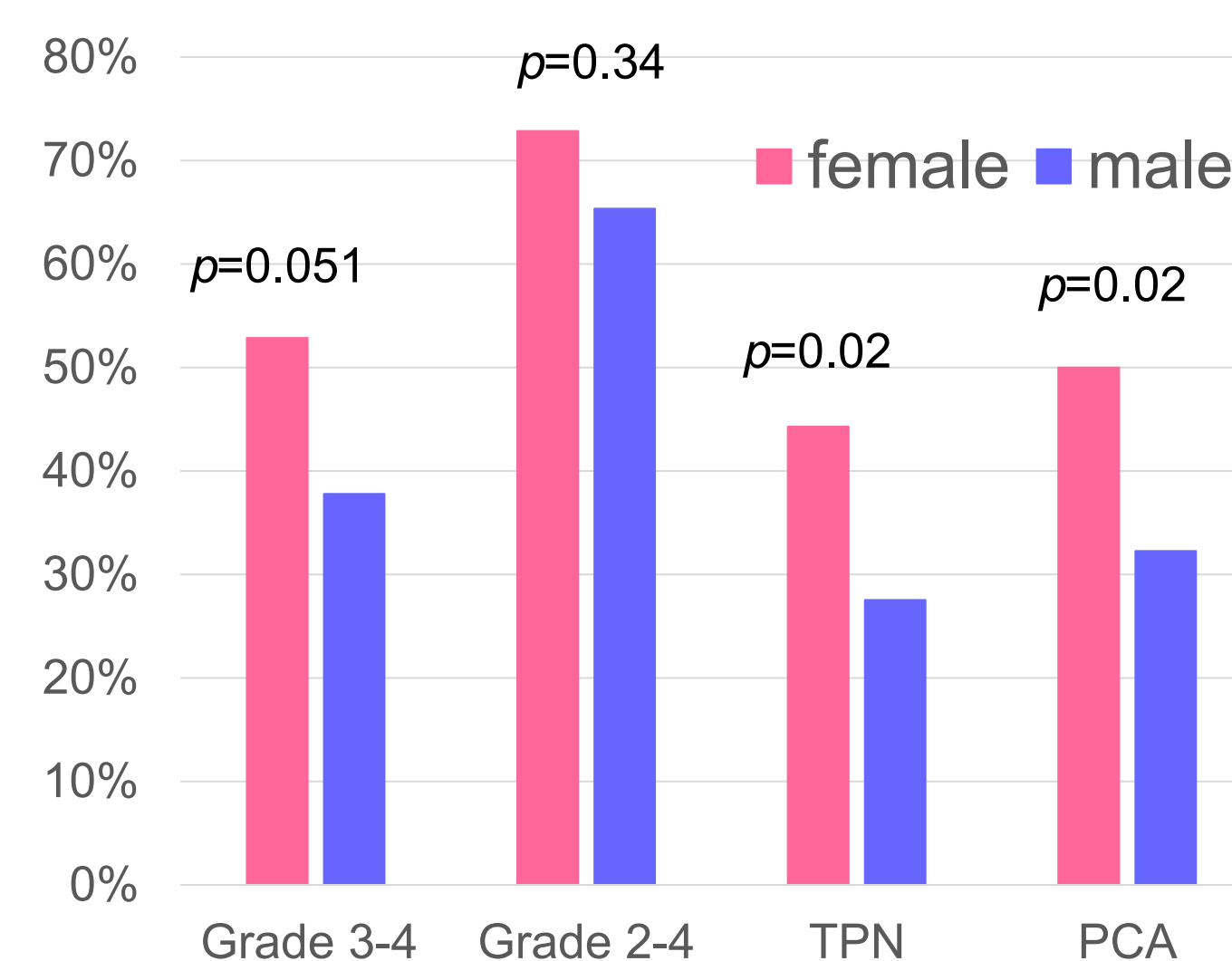


Use of TPN and PCA



Patient-related risk factors in FluMel patients (N=197)

Gender



Age and BMI

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 melphalan in combination with methotrexate and in BEAM.
- Female gender is a patient-related risk factor.
- Treatment regimen is an important risk factor – Clinical trials should include single regimen or stratify randomisation according to the regimens.

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