

DENTAL MANAGEMENT OF PATIENTS WITH HAEMATOLOGICAL MALIGNANCY

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Dentistry



LEARNING OUTCOMES



Assess
dental
needs of
patients
with
haematolo
gical
malignanc
y



Collaborat
e
effectively
as part of
a
profession
al team



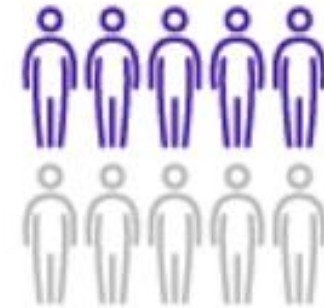
Apply
principles
to optimise
care for
these
patients

WHAT IS CANCER?

Cancer, strictly speaking, is the term given to malignant tumours arising from epithelial tissues (skin & mucosa) and is essentially a genetic disease caused by mutations in DNA.

Lifetime risk

50%



1 in 2 UK people will be
diagnosed with cancer
in their lifetime

HAEMATOLOGICAL MALIGNANCIES

Acute Leukaemias

- Acute Lymphoblastic Anaemia (ALL)
- Acute Myeloid Leukaemia (AML)

Chronic Leukaemias

- Chronic Myeloid Leukaemia (CML)
- Chronic Lymphocytic Leukaemia (CLL)

The Malignant Lymphomas

- Non-Hodgkin Lymphoma
- Hodgkin Lymphoma

Multiple Myeloma

Myelodysplastic Syndromes

The Chronic Myeloproliferative Diseases (biologically malignant)

RISKS AND LOGISTICS

- Screening
- Time pressure
- Competing appointments



CHEMOTHERAPY DRUGS AND REGIMENS

Chemotherapy drugs and regimens	
Chemotherapy drugs and regimens	
Drug classification	Examples
Ankylating agents	Busulphan, Chlorambucil, Cyclophosphamide
Cytotoxic antibiotics	Bleomycin, Doxorubicin
Antimetabolites	Flurouracil, Methotrexate
Vinca alkaloids	Vinblastine, Vincristine
Platinum Compounds	Cisplatin

Deciphering novel chemotherapy and its impact on dentistry

Rebecca King,¹ Lara Zebic² and Vinod Patel^{*3}

Key points

In recent years, there has been a significant increase in the number and types of novel targeted chemotherapy drugs, with the trend likely to continue.

Targeted therapies can have side effects pertinent to the dental practitioner for the management of oral and dental care.

A number of these novel medications have been implicated in osteonecrosis of the jaw and the risk may be compounded further if given in conjunction with bisphosphonates or denosumab.

Targeted therapy nomenclature

Drug category	Suffix
Monoclonal antibodies	–mab
Variant fusion proteins	–cept
Tyrosine kinase inhibitors	–nib
Mammalian target of rapamycin inhibitors	–limus
Histone deacetylase inhibitors	–inostat
Phosphoinositide 3-kinase inhibitors	–sib
Proteasome inhibitors	–mib
Hedgehog pathway inhibitors	–gib

NOVEL CHEMOTHERAPY TARGETED THERAPIES (TTS)

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BLOOD CHANGES

Anaemia

Neutropenia

Thrombocytopenia

Present from commencement of cancer therapy until up to 4 weeks post therapy



HAEMATOLOGICAL INVESTIGATIONS

Fig. 3 Haematological investigations for patients requiring surgical procedures during active chemotherapy^{85,92,93}

Full Blood Count	Est. Normal Range*	Interpretation
Neutrophils	2 - 8 x 10 ⁹ /L	Infection risk with reduced neutrophil counts <ul style="list-style-type: none"> • Antibiotic prophylaxis recommended if <1 x 10⁹/L
Platelets	150 - 450 x 10 ⁹ /L	Bleeding risk with reduced platelet counts <ul style="list-style-type: none"> • Use local haemostatic measures • Consider platelet transfusion if <50 x 10

Coagulation Screen	Est. Normal Range*	Interpretation
International normalisation ratio (INR)	0.9 - 1.1	Bleeding risk with prolonged INR and PT <ul style="list-style-type: none"> • May suggest acute liver dysfunction • Use local haemostatic measures
Prothrombin time (PT)	10 - 13 seconds	

Liver Function	Est. Normal Range*	Interpretation
Alanine transaminase (ALT)	7 - 56 u/L	Potential bleeding risk with elevated ALT and AST <ul style="list-style-type: none"> • Suggests liver dysfunction and possible coagulopathy
Aspartate aminotransferase (AST)	10 - 40 u/L	

*Estimates only, please refer to local lab reference ranges when interpreting test results.

BEFORE CHEMOTHERAPY/STEM CELL TRANSPLANT

- Comprehensive **dental screening**
- Eliminate sources of **infection**
- Definitive dental **treatment plan**
- Address **urgent dental needs** - allowing time for healing.
- **Supportive** periodontal treatment
- **Enhanced prevention**

BASIC ORAL CARE (BOC)

Prevention of Infection

Pain control

Maintain Oral functions

Managing the complications of the cancer treatment

Improve QoL of the patient

Support Care Cancer (2015) 23:223–236
DOI 10.1007/s00520-014-2378-x

REVIEW ARTICLE

Basic oral care for hematology–oncology patients and hematopoietic stem cell transplantation recipients: a position paper from the joint task force of the Multinational Association of Supportive Care in Cancer/International Society of Oral Oncology (MASCC/ISOO) and the European Society for Blood and Marrow Transplantation (EBMT)

Sharon Elad · Judith E. Raber-Durlacher · Michael T. Brennan · Deborah P. Saunders · Arno P. Mank · Yehuda Zadik · Barry Quinn · Joel B. Epstein · Nicole M. A. Blijlevens · Tuomas Waltimo · Jakob R. Passweg · M. Elvira P. Correa · Göran Dahlblöf · Karin U. E. Garving-Legert · Richard M. Logan · Carin M. J. Potting · Michael Y. Shapira · Yoshihiko Soga · Jacqui Stringer · Monique A. Stokman · Samuel Vokurka · Elisabeth Wallhult · Noam Yarom · Siri Beier Jensen

MUCOSITIS



Fungal Infections

Due to:
Reduced salivary flow and immunosuppression

What can I do?

- Topical anti-fungals

Lichen planus & erythema multiform

Due to:
Drug reaction from TTs

What can I do?

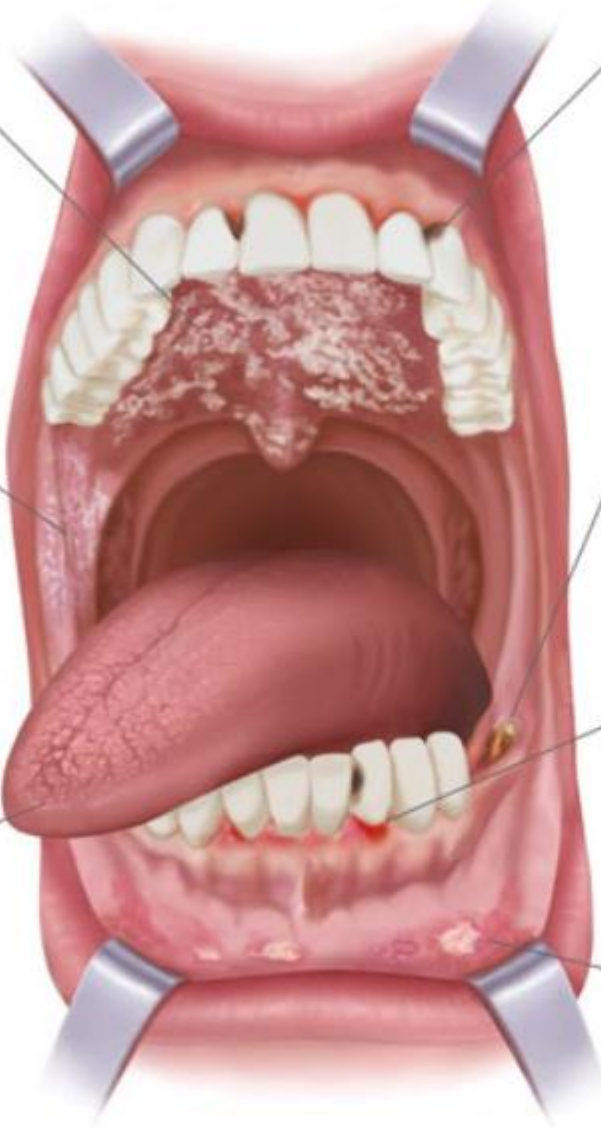
- Referral to secondary/tertiary care services

Xerostomia & altered taste

Due to:
Reduced salivary flow and diffusion of TT into oral cavity

What can I do?

- Frequent sips of water
- Oral lubricants, sugar-free sialogogues



Caries

Due to:
Reduced salivary flow and high-calorie dietary supplements

What can I do?

- High fluoride toothpaste/mouthrinse
- Fluoride varnish
- Tailored oral hygiene instruction

Osteonecrosis

Due to:
Anti-resorptives, anti-angiogenics and immunosuppressive effects

What can I do?

- Chlorhexidine rinses
- Referral to secondary/tertiary care services

Bleeding tendencies

Due to:
Thrombocytopenia

What can I do?

- Haematological screening prior to invasive procedures

Mucositis & ulceration

Due to:
Leukopenia

What can I do?

- Analgesics: crushed ice, benzydamine rinses, Bioextra gel

CASE BASED DISCUSSION

- 36-year-old male
- Acute Myeloid Leukaemia (AML) diagnosed Jan '23
- Induction chemotherapy commenced Jan '23
- Relapsed AML July '23
- Being worked up for allogenic stem cell transplant



SOFT TISSUE PRESENTATION

- Punch Biopsy
- Morphological and immunohistochemical features in keeping with
- Recurrence/relapse of previous AML / myeloid sarcoma

currently or possibly pregnant?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
treatment from a doctor, hospital or clinic?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	307+112 ARI Gan
for the counter or prescribed medications contraceptives or medications for Osteoporosis diseases.	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	See computer
medical warning card?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
taken any steroids in last 12 months?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	June/July
er from	Yes		No		Give Details
medicines, food or substances?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
eczema?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
thma or other chest conditions?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
s, giddiness, blackouts or epilepsy?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
s, angina, blood pressure problems, murmur other heart surgery? Including placement or pacemaker	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	
es anyone in your family?)	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	

child or since, have:	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Endocarditis or Chorea?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Jaundice, Hepatitis) or kidney disease?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
illness, including diagnosis of us Chemotherapy or Radiotherapy?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
d your blood refused by the Blood se?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
eneral or local anaesthetic?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
t or other implant? (Implant)	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
ired you to be in hospital?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
ment before the mid -1980's?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
t, sibling, child, grandparent or feldt Jakob Disease (CJD)?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
ural problems?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>

chairs are designed to take patients who weigh up to a maximum weight of 21 stone / 133 kilograms. If you think this then please discuss this with your dentist so that alternative arrangements for your treatment can be arranged.

Units per week			
0			

	Yes	No	In Past	Quantity
do products now	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	20 A DAY
How many times per day?				18-21 years
n, use Gutkha or Supari now	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ow many times per day?				

etails which your dentist might need to know about, such as self-prescribed medicines (eg Aspirin)

Awaiting Stem Cell transplant Glasgow
Neutrophils 0.3 - Thursday 14th Sept '23

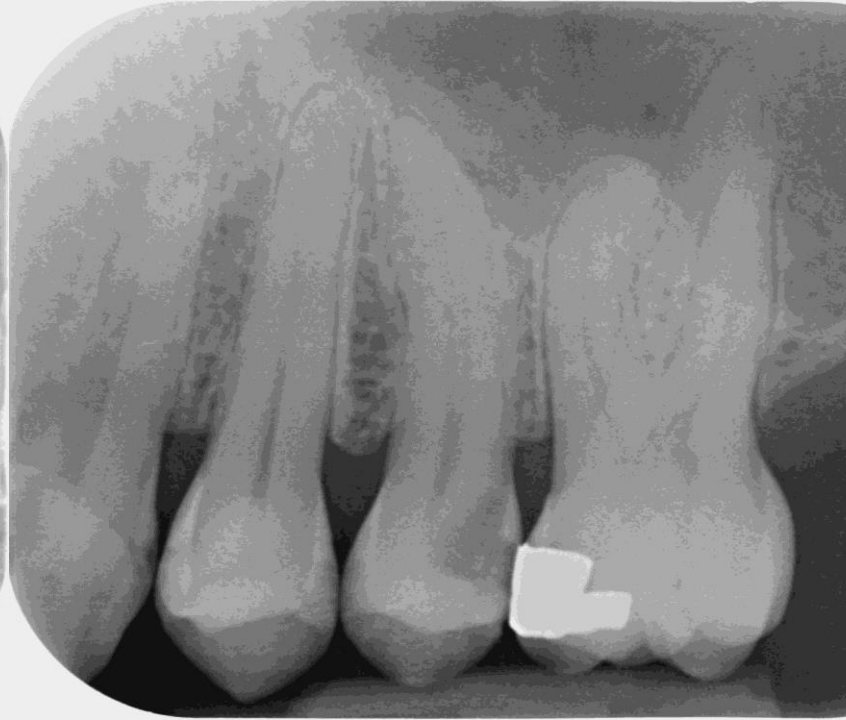
MEDICAL HISTORY

EXAMPLE OF A PATIENT'S CHEMOTHERAPY REGIME

ABOUT THE MEDICINES THAT YOU HAVE BEEN GIVEN								
Name Of Medicine	Dose	Unit	How to take it	Frequency	What is it for?	How long to take	Hospital Pharmacy to dispense?	Pharmacy use only
Paracetamol	1	g	Oral	4 times daily			N	
Indapamide	2.5	mg	Oral	Morning			N	
Felodipine MR	5	mg	Oral	Morning			N	
Laxido	1	sachet	Oral	Morning and Night			N	
Omeprazole	20	mg	Oral	Morning			N	
Priadel	800	mg	Oral	Night			N	
Cyclophosphamide	500	mg	Oral	Once a week/Fri		3 weeks in total	N	
Aciclovir	400	mg	Oral	Morning and Night			N	
Dexamethasone	20	mg	Oral	Morning		on 18/6, 20-21/6, 24-24/6 and 27-28/6/16 only	N	as per chemo script
Domperidone	10	mg	Oral	6 hrly as required	nausea	Max 30mg in 24hrs	N	
MST SR	30	mg	Oral	Morning and Night			Y	
supply 28 (twenty eight) 30mg tabs								
Morphine Sulphate	10	mg	Oral	one hourly as required for pain			Y	10mg/5ml oral solution
Glimepiride	1	mg	Oral	Before Breakfast		on days only when Dexamet hasone is	Y	1 box

RADIOGRAPHIC INVESTIGATION





PA RADIOGRAPHS



Test Item	Value	Units	Normal Value
HB	134	g/l	140 - 180
RBC	3.9	$\times 10^{12}/l$	5.0 - 6.0
HCT	0.39	l/l	0.42 - 0.54
MCV	100	fl	83 - 98
MCH	34.9	pg	27 - 32
PLT	153	$\times 10^9/l$	140 - 400
WBC	0.9	$\times 10^9/l$	4.0 - 10.0
NEUT	0.3	$\times 10^9/l$	1.5 - 7.0
EOS	0.00	$\times 10^9/l$	0.1 - 0.5
BASO	0.01	$\times 10^9/l$	0.01 - 0.10
LYMPH	0.3	$\times 10^9/l$	1.0 - 4.0
MONO	0.2	$\times 10^9/l$	0.2 - 0.8
Amounts			

THREE
ONCOLOGIST
S BY KEN
CURRIE





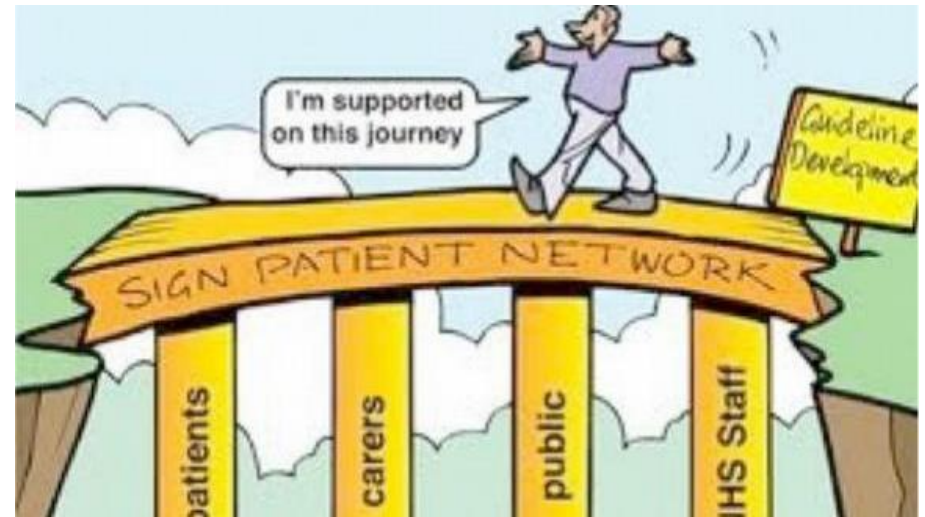
HAEMATOLOGY ONCOLOGY TEAM ARI

- Dr Gavin Preston , Clinical Lead
- Dr Al Lawrie
- Dr Dominic Cullighan



OTHER FRIENDLY FACES AND CONSULTANT HAEMATOLOGISTS

- Dr Charlotte Robertson
- Dr Michelle Harrison
- Dr Stephanie Stone



MULTI DISCIPLINARY TEAMS AND CLINICAL NETWORK SUPPORT

GUIDELINES



The Oral Management of Oncology Patients Requiring Radiotherapy, Chemotherapy and/or Bone Marrow Transplantation by N. Kumar, A. Brooke, M. Burke et al, created in association with the British Society for Disability and Oral Health



**British Society of
Special Care Dentistry**

UNLOCKING BARRIERS TO CARE

THANKYOU



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