DENTAL ASSESSMENT OF CARDIOTHORACIC SURGERY AND HAEMATOLOGICAL **MALIGNANCY PATIENTS**

Becky Lees SDO Oral Surgery City PDS

AIMS

- To provide PDS staff with training to aid them in the delivery of safe, high quality, patient-centred care for cardiothoracic surgery and haematological malignancy patients.
- To introduce the use of a robust and standardised approach to dental assessment and encourage the appropriate use of resources and service providers across dental services in NHS Grampian (including general dental practices (GDS), public dental services (PDS) and hospital dental services (HDS)).

OBJECTIVES

- 1. To review common cardiac and haematological conditions including the terminology used when discussing these conditions, their aetiology and implications on dental treatment.
- 2. To know what patient information is essential to gather for cardiothoracic surgery and haematological malignancy patients at point of referral.
- 3. To review published evidence and guidance in relation to providing dental treatment for these patient groups
- 4. To consider how other PDS across Scotland organise and provide treatment for cardiothoracic surgery patients
- 5. To implement a standardised assessment protocol to enable evidencebased treatment planning and safe provision of dental treatment for these patient groups

CARDIOTHORACIC SURGERY PATIENTS



CARDIAC CYCLE





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CARDIAC VESSEL CONDITIONS

- Coronary Heart Disease (CHD)
- Acute Coronary Syndromes
- Angina
- Myocardial Infarction STEMI, NSTEMI



MYOCARDIAL INFARCTION

- STEMI = ST elevation myocardial infarction
- NSTEMI = non-ST elevation myocardial infarction

CARDIAC VALVE CONDITIONS

- Aortic stenosis
- Mitral valve prolapse
- +/ Regurgitation
- Infective endocarditis

Top View of the Heart Valves



OTHER CARDIAC CONDITIONS

- Arrhythmia
- Hypertrophic cardiomyopathy
- Heart failure
- Structural congenital heart disease
- Cardiac arrest

TREATMENT OF CARDIAC CONDITIONS

- Lifestyle changes
- Medications
- Cardiothoracic Surgery

COMMON CARDIAC MEDICATIONS

- Antiplatelet medications aspirin, clopidogrel, ticagrelor, prasugel
- Anticoagulants warfarin, dalteparin, enoxaparin, rivaroxaban, apixaban, dabigatran, edoxaban.
- Angiotensin-converting enzyme (ACE) inhibitors Ramipril, enalapril, Lisinopril,
- Angiotensin receptor blockers candesartan, losartan,

COMMON CARDIAC MEDICATIONS

- Beta-blockers- bisoprolol, atenolol, propranolol
- Calcium channel blockers amlodipine, felodipine, nifedipine
- Cardiac glycoside digoxin
- Nitroglycerin isosorbide mononitrate, isosorbide dinitrate, glyceryl trinitrate.
- Statins simvastatin, atorvastatin, rosuvastatin,

VALVE SURGERIES

- Balloon valve surgery
- Valve repair
- Valve replacement
- TAVI = Transcatheter Aortic Valve Implantation

QUICK QUIZ

- 1. What is a ortic stenosis?
- 2. Name a common antiplatelet medication
- 3. What is the valve called between the left atrium and left ventricle?
- 4. What is a CABG?

IMPLICATIONS FOR DENTISTRY



NICE quideline



Antibiotic Prophylaxis Against Infective Endocarditis Implementation Advice

Prophylaxis against infective endocarditis: antimicrobial prophylaxis against infective endocarditis in adults and children undergoing interventional procedures

Clinical guideline Published: 17 March 2008 Last updated: 8 July 2016

www.nice.org.uk/guidance/cg64

This advice has been provided to facilitate the implementation of NICE Clinical Guideline 64 (CG64) *Prophylaxis Against Infective Endocarditis.*

This advice does not replace NICE CG64.



Scottish Dental Clinical Effectiveness Programme

Table 4.1 Identifying the special consideration sub-group

Patients at increased risk of IE

- acquired valvular heart disease with stenosis or regurgitation;
- hypertrophic cardiomyopathy;
- previous infective endocarditis;
- structural congenital heart disease, including surgically corrected or palliated structural conditions, but excluding isolated atrial septal defect, fully repaired ventricular septal defect or fully repaired patent ductus arteriosus, and closure devices that are judged to be endothelialised;
- valve replacement.

Sub-group requiring special consideration

- prosthetic valve, including transcatheter valves, or where any prosthetic material was used for valve repair;
- previous infective endocarditis;
- congenital heart disease (CHD):
 - any type of cyanotic CHD;
 - any type of CHD repaired with a prosthetic material, whether placed surgically or by percutaneous techniques, up to 6 months after the procedure or lifelong if residual shunt or valvular regurgitation remains.

Table 4.2 Examples of invasive and non-invisive dental procedures

Invasive dental procedures Non-invasive dental procedures Placement of matrix bands Infiltration or block local anaesthetic Placement of sub-gingival rubber dam injections in non-infected soft tissues . BPE screening clamps Sub-gingival restorations including fixed Supra-gingival scale and polish prosthodontics Supra-gingival restorations Endodontic treatment before apical stop Supra-gingival orthodontic bands and has been established separators Preformed metal crowns (PMC/SSCs) Removal of sutures . Full periodontal examinations (including Radiographs • pocket charting in diseased tissues) Placement or adjustment of orthodontic Root surface instrumentation/subor removable prosthodontic appliances gingival scaling Incision and drainage of abscess Dental extractions Surgery involving elevation of a mucoperiosteal flap or muco-gingival area Placement of dental implants including temporary anchorage devices, miniimplants Uncovering implant sub-structures N.B. In addition, antibiotic prophylaxis is not recommended following exfoliation of primary teeth or trauma to the lips or oral mucosa.

INFECTIVE ENDOCARDITIS

- Infective endocarditis (IE) is predominantly a bacterial infection with 80% of the cases caused due to streptococci and staphylococci.
- IE is more commonly observed among patients with prosthetic valves, mitral valve prolapse, congenital heart diseases, intracardiac devices, rheumatic heart disease, infective endocarditis history, or a history of cardiac valve surgery.
- Prosthetic valve patients with Staphylococcus aureus IE have a high mortality rate of 40% or more

- The healthy valvular endothelium is resistant to microbial colonization but damaged valvular endothelium gets colonized by the circulating bacteria in the bloodstream forming infective vegetation and causing infection.
- The presence of valvular vegetation is a major criterion in the diagnosis of IE.
- Severe complications of IE include sepsis, paravalvular extension, embolic events, stroke, and heart failure. Management includes prolonged intravenous antibiotics and valvular surgery.

- It has become imperative for dentists to have adequate knowledge of this disease for the safe and effective management of these patients.
- It is important to understand the implications of valvular conditions before performing any dental procedure to avoid the risk of infective endocarditis (IE), risk of excessive bleeding due to anticoagulants, and potential worsening of the coexisting heart failure.

- There is still a lack of substantial scientific evidence to prove that dental procedures cause IE in patients with underlying cardiac conditions and that antibiotic prophylaxis is worthwhile in preventing IE. Even 100% effective antibiotic prophylaxis can prevent only a small number of IE cases.
- The majority of the IE cases are caused due to bacteraemia from routine daily activities including brushing, flossing, and chewing.

- Through regular dental check-ups, patient education, and proper oral hygiene maintenance for these patients the risk of bacteraemia caused by daily activities such as brushing and flossing will be minimised.
- Maintaining good oral hygiene remains the most important element in preventing IE in valvular heart disease patients.

- The optimum INR range of anticoagulation for mitral mechanical valves is 2.5–3.5 while for aortic valves is 2–3.
- Thrombogenicity of older prosthetic valves is known to be higher and needs INR of up to 4.
- The main clinical implications for patients having prosthetic valves during dental treatment are (a) the need for antibiotic prophylaxis against infective endocarditis and (b) perioperative anticoagulation management



ESC GUIDELINES

• 2015 ESC Guidelines for the management of infective endocarditis

The Task Force for the Management of Infective Endocarditis of the European Society of Cardiology (ESC)

Endorsed by: European Association for Cardio-Thoracic Surgery (EACTS), the European Association of Nuclear Medicine (EANM)

Authors/Task Force Members: Gilbert Habib* (Chairperson) (France), Patrizio Lancellotti* (co-Chairperson) (Belgium), Manuel J. Antunes (Portugal), Maria Grazia Bongiorni (Italy), Jean-Paul Casalta (France), Francesco Del Zotti (Italy), Raluca Dulgheru (Belgium), Gebrine El Khoury (Belgium), Paola Anna Erba^a (Italy), Bernard Iung (France), Jose M. Miro^b (Spain), Barbara J. Mulder (The Netherlands), Edyta Plonska-Gosciniak (Poland), Susanna Price (UK), Jolien Roos-Hesselink (The Netherlands), Ulrika Snygg-Martin (Sweden), Franck Thuny (France), Pilar Tornos Mas (Spain), Isidre Vilacosta (Spain), and Jose Luis Zamorano (Spain)

Document Reviewers: Çetin Erol (CPG Review Coordinator) (Turkey), Petros Nihoyannopoulos (CPG Review Coordinator) (UK), Victor Aboyans (France), Stefan Agewall (Norway), George Athanassopoulos (Greece), Saide Aytekin (Turkey), Werner Benzer (Austria), Héctor Bueno (Spain), Lidewij Broekhuizen (The Netherlands), Scipione Carerj (Italy), Bernard Cosyns (Belgium), Julie De Backer (Belgium), Michele De Bonis (Italy), Konstantinos Dimopoulos (UK), Erwan Donal (France), Heinz Drexel (Austria), Frank Arnold Flachskampf (Sweden), Roger Hall (UK), Sigrun Halvorsen (Norway), Bruno Hoen^b (France), Paulus Kirchhof (UK/Germany),

* Corresponding authors: Gilbert Habb, Service de Cardiologie, C.H.U. De La Timone, Bd Jean Moulin, 13005 Marseille, France, Tel: +33 4 91 38 75 88, Fax: +33 4 91 38 47 64, Email: gilbert.habb2@gmail.com

Patriaio Lancellotti, University of Liège Hospital, GIGA Cardiovascular Sciences, Departments of Cardiology, Heart Valve Clinic, CHU Sart Tilman, Liège, Belgium – GVM Care and Research, E.S. Health Science Foundation, Lugo (RA), Italy, Tel: +3243667194, Exa: + 3243667194, Email: plancellotti@chu.ulg.ac.be

ESC Committee for Practice Guidelines (CPG) and National Cardiac Societies document reviewers: listed in the Appendix

ESC entities having participated in the development of this document:

ESC Associations: Acute Cardiovascular Care Association (ACCA), European Association for Cardiovascular Prevention & Rehabilitation (EACPR), European Association of Cardiovascular Imaging (EACVI), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA).

ESC Councils: Council for Cardiology Practice (CCP), Council on Cardiovascular Nursing and Aliad Professions (CCNAP), Council on Cardiovascular Phrimary Care (CCPC). ESC Working Groups: Cardiovascular Phrimary, Cardiovascular Surgery, Grown-up Congenital Heart Disease, Myocardial and Pericardial Diseases, Pulmonary Groulator and Right Ventricular Function, Thomboin, Nahular Heart Disease.

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AHA GUIDELINE

Prevention of Infective Endocarditis

Guidelines From the American Heart Association: A Guideline From the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group

Walter Wilson, MD, Chair, Kathryn A. Taubert, PhD, FAHA, Michael Gewitz, MD, FAHA, Peter B. Lockhart, DDS, Larry M. Baddour, MD, Matthew Levison, MD, Ann Bolger, MD, FAHA, Christopher H. Cabell, MD, MHS, Masato Takahashi, MD, FAHA, Robert S. Baltimore, MD, Jane W. Newburger, MD, MPH, FAHA, Brian L. Strom, MD, Lloyd Y. Tani, MD, Michael Gerber, MD, Robert O. Bonow, MD, FAHA, Thomas Pallasch, DDS, MS, Stanford T. Shulman, MD, FAHA, Anne H. Rowley, MD, Jane C. Burns, MD, Patricia Ferrieri, MD, Timothy Gardner, MD, FAHA, David Goff, MD, PhD, FAHA, David T. Durack, MD, PhD, and The Council on Scientific Affairs of the American Dental Association has approved the guideline as it relates to dentistry. In addition, this guideline has been endorsed by the American Academy of Pediatrics, Infectious Diseases Society of America, the International Society of Chemotherapy for Infection and Cancer, and the Pediatric Infectious Diseases Society.

ABSTRACT: Background— The purpose of this statement is to update the recommendations by the American Heart Association (AHA) for the prevention of infective endocarditis that were last published in 1997. **Methods and Results**— A writing group was appointed by the AHA for their expertise in prevention and treatment of infective endocarditis, with liaison members representing the American Dental Association, the Infectious Diseases Society of America, and the American Academy of Pediatrics. The writing group reviewed input from national and international experts on infective endocarditis. The recommendations in this document reflect

DENTAL ASSESSMENT

- Patients scheduled for an elective cardiovascular procedure can be referred to OMFS departments, specialist hospital dental units, public dental service or to their general dentists for assessment and treatment of an oral/dental infection.
- A standardised protocol on how to carry out a comprehensive and accurate dental assessment and provide the necessary dental treatment safely is required.

Golden Jubilee National Hospital

1045 National Wating Times Centre

Chair Jeans Freeman Chief Executive Jitt Young Agrowston Street Clydebank 681 40Y Scolarve Telephone 0141 881 5000 Fax 0141 981 5800



GOLDEN JUBILEE LETTER TO PATIENT

Enquires to: 0141 951 6641 Dental Advice: 0141 951 5828

Dear Petient

As you will be aware you are being considered for heart surgery at the Golden Jubilee National Hospital.

As part of your preparation for your surgery you must attend your dentist for a check up. It is very important that you tell your dentist you may be having heart surgery. Please note, even if you have dentures, the health of your mouth still needs to be checked by your dentist.

If you require any dental treatment, this needs to be completed as soon as possible. Please note your operation may be cancelled if your dental treatment has not been completed.

We ask that you make an appointment with your dentist as soon as possible. At your appointment with your dentist please hand them the attached letter and ask them to complete the section on page two.

At the end of your appointment with your dentist, they will give you the completed form back. It is very important to return the completed form as soon as possible to:

ALISON DONOHOE CARDIAC WAITING LIST CO-ORDINATOR GOLDEN JUBILEE NATIONAL HOSPITAL AGAMEMNON STREET CLYDEBANK G81 4DY

Failure to return this form may delay your impending surgery.

If you do not have a dentist please contact your relevant Health Board on the following numbers to arrange a dental appointment:

NHS Greater Glasgow & Clyde Patients – 0141 232 9701 NHS Lanarkshire Patients - 0300 3030243 NHS Dumfries & Galloway Patients – 08456026417 NHS Ayrshire and Arran Patients – 01563 578664 NHS Forth Valley Patient – 08448006886 NHS Western Isles Patients – 01851 707500 NHS Highland (Argyll & Bute) Patients – 08458 332310 NHS Highland Patients – 08456 442271

Thank you for your support with this.

Yours faithfully

Alison Donohoe Cardiac Waiting List Co-ordinator 0141 951 5341 Golden Jubilee National Hospifal NHS National Waiting Times Centre

Chair Jeans Freeman Chief Executive Jill Young Agamempon Stroet Clydebank G81 40Y Scotland Tstephone 0141 851 5000 Fax 0141 951 5500

SCOTLAND

GOLDEN JUBILEE LETTER TO GDP

Enquires to: 0141 951 5541 Dental Advice: 0141 951 5829

Dear Dental Colleague,

[Attach patient label]

The above patient has been attending the Cardiothoracic Department of the Golden Jubilee National Hospital and is being considered for heart surgery.

As this patient is at a higher than average risk of infective endocarditis it is important that their oral health be optimised, and where possible dental treatment should be completed prior to admission for surgery. Given the urgency that any dental treatment be undertaken prior to surgery I would be very grateful if you arrange to assess and treat them as soon as possible and complete the form attached to the end of this letter.

Detailed below are conditions which can increase chances of a infection:

- Uncontrolled periodontal disease
 - Pus on probing
 - Recurring and chronic periodontal abscesses
 - Grade III mobility
 - Bleeding pockets greater than 4mm
 - Furcation lesions
- Abscessed teeth
- Root filled teeth
 - Symptomatic
 - Inadequate endodontic therapy
 - Associated periapical pathology
- Periapical pathology evident radiographically
- Recurrent pericoronitis

If you require any further dental advice, please contact the Dental Department at Golden Jubilee National Hospital on 0141 951 5829.

Yours faithfully

Dear Dental Colleague

Please complete the section below and return to the patient so they can post or bring along to the Golden Jubilee National Hospital as soon as possible.

- To the best of my knowledge I have removed any sources of infection as detailed previously.
- The patient requires treatment to remove sources of infection which has not been provided.

Please provide details:

DATE OF BIRTH :

Dentist Signature:

Date:

Name/Stamp of Dentist:

"DETAILED BELOW ARE CONDITIONS WHICH CAN INCREASE CHANCES OF AN INFECTION:"

- Uncontrolled periodontal disease
- Pus on probing
- Recurring and chronic periodontal abscessed
- Grade III mobility
- Bleeding pockets >4mm
- Furcation lesions
- Abscessed teeth
- Root filled teeth
- Symptomatic
- Inadequate endodontic therapy
- Associated periapical pathology
- Periapical pathology evident radiographically
- Recurrent pericoronitis

• Treatment should be carried out no less than 7 days prior to any cardiothoracic surgery to allow for healing and no post operative infection of the socket, with an ideal amount of time being 14 days.

OTHER CARDIAC CONDITIONS TO CONSIDER

- How do we decide if it is appropriate to treat a patient within the PDS in a primary care site?
- Need to consider:
- the nature, severity and stability of the patient's medical condition
- their functional capacity and emotional status (degree of anxiety)
- the invasiveness of the procedure required



CARDIOTHORACIC SURGERY CASE STUDIES

If your patient needs to communicate in a mode or anguage other than English please specify: Please state whether an accompanying person can translate or if an interpreter will be needed: Patient speaks limited English. First language is Polish. Daughter can translate for him if in visiting. Otherwise probably needs Language Line

 Name of contact person:
 Relationship / status e.g. relative / key worker / social worker etc:FY2 Doctor Cardiology

Address Ward 109, ARI

.

Tel:01224551097

Reason for Referral

Clinical Reason for Referral

Cardiothoracic surgeons have asked for a routine dental check-up to be undertaken before undergoing aortic valve replacement

Summary of Special Care Need

Inpatient in ward 216. Admitted with new heart failure. Echo shows LV systolic dysfunction with bicuspid aortic valve and resulting severe eccentric aortic regurgitation. Cardiology MDT recommended surgical referral for aortic valve replacement. Surgeons have asked for routine dental check-up before AVR

Medical history Please list all current medications taken and any specialist medical clinics attended: Hypertension

Meds - Furosemide, Aspirin, Bisoprolol, Dalteparin (5000 units OD), Atorvastatin, Amlodipine

CASE STUDY 1

Summary of oral health status (e.g. ca	aries and oral by	miono)			5		
Patient reports PMH of periodontitis and a	few missing t	teeth.			ſ		
Special Care Dentistry Referral Fo	orm				P	age 2	
If unable to print form double sided, then	please re-ente	er				-	
Please re-enter patient's name		8	k DoB				
Further Information Please tick							
Access M	ledical complic	ations 🗌		Anxiet	/ / phobia		
Learning disability	ental Illness						
				2 40°			
Does the person go out at an? I fes							
Living arrangements: Alone		With fan	nily 🗀		In care		
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Mobility: Walks unaided [s waiking ald		eichair use		Beabouria		
Does patient have capacity for conset	nt Yes		No 🗌				
If no please enter details of weirare Guardian			· .				
Name			Contact	Number			
			i				
Help that you can provide			1				
Please include details of dental care that you a	ire able to provi	ide e.g. preve	ention, as w	ell as your re	eferral requ	est	
None required							
			· · ·				
		1 5 Marca					
Enclosures (e.g. radiographs, study mod	els, photograp	ohs) None	- 				
Would you like these returned?				Yes		No	
Woodd you ince chese recurricu?				145		110	
Is the patient registered at your practice?	`	Yes 🗌	No 🗌	ſ	Please m	under howe to	a confr
I confirm this patient referral comes within the currer	ent referral cuidelic	nes issued by	NHS Grampia	n Dental Servi	ces	Idin Dur B	\mathbb{Z}
	arc referrer geisen						
Print Name of Referring Dr Tiberi	iu Pana		· ·				
Print Name of Referring Dr Tiberi	iu Pana		- 				
Print Name of Referring Dr Tiberi	iu Pana		· ·	Date 2	8/03/2023		
Print Name of Referring Dr Tiberi Signed (Clinician)	iu Pana		· · · · · · · · · · · · · · · · · · · ·	Date 2	8/03/2023		
Print Name of Referring Dr Tiberi Signed (Clinician) REFERRING PRACTITIONER GDP STAMP/DETAILS	iu Pana		GMP S	Date _2	8/03/2023 TAILS		

CASE STUDY 1

- 52 year old male
- presented in March to A+E with chest pain and fixed rate tachycardia
- Current inpatient
- Investigations
- Troponin elevated
- ECG sinus tachycardia
- ECHO cardiogram

- Diagnoses
- Bicuspid AV
- Severe AR
- Dilated aortic sinus
- Mild AS
- Severe LVH
- Severely dilated LV + mod LVSD
- Coro angio-mild distal plaque disease

CASE STUDY 1

- Medications:
- Furosemide
- Aspirin
- Bisoprolol
- Dalteparin
- Atorvastatin
- Amlodipine
- Surgical treatment required
- Mechanical AVR
CASE STUDY 1 - DENTAL ASSESSMENT



CASE STUDY 1 - DENTAL ASSESSMENT





CASE STUDY 1 - TREATMENT PLAN

• XLA UR7, UR1, UL5, LR1, LR7 +/- LL1 and LR2

- Considerations
- Bleeding risk
- Antibiotic prophylaxis
- Functional capacity (level of anxiety)
- Invasiveness of procedure

CASE STUDY 1 - OUTCOME

- Mechanical AVR placed with no complications
- Lifelong warfarin with target INR 2-3

If your patient needs to communicate in a mode or language other than English please specify: Please state whether an accompanying person can translate or if an interpreter will be needed:

Address Any member of the Cardiology junior doctor team, please call 50437

Name of contact person:

Cardiology Junior Doctors

Tel:01224550437

N/A		
N/A		

Relationship / status e.g.

CASE STUDY 2

social worker etc:Medical Team	Mandible Canine extracted, Premolar filling in maxillary
m, please call 50437	
	Special Care Dentistry Referral Form Page 2 If unable to print form double sided, then please re-enter
outine dental check up to ensure no sources of	Please re-enter patient's name Joao Souso & DoB 22/08/73 Further Information Please tick
	Does the person go out at all? Yes No Image: Constraint of the second sec
	Mobility: Walks unaided Image: Needs walking aid Image: Wheelchair user Image: Bedbound Image: Bedbound Does patient have capacity for consent Yes No Image: Bedbound Image:
	Name Contact Number
n and any specialist medical clinics attended:	Help that you can provide Please include details of dental care that you are able to provide e.g. prevention, as well as your referral request
	Enclosures (e.g. radiographs, study models, photographs)
	Would you like these returned? Yes No
	Is the patient registered at your practice? Yes No Please mark box to confirm I confirm this patient referral comes within the current referral guidelines issued by NHS Grampian Dental Services
giene)	Print Name of Referring Abdul Hai
nien out.	Signed (Clinician) Date 21/05/2023

Reason for Referral Clinical Reason for Referral Requires an Aortic valve replacement so he will need a routine dental check up to ensu infection Summary of Special Care Need IP in ward 109 Medical history Please list all current medications taken and any specialist medical cli Severe Aortic Stenosis, On ACS treatment

Summary of oral health status (e.g. caries and oral hygiene) No maxillary teeth, have either been removed or have fallen out.

- 49 year old male
- Presented to Dr Grays Hospital after he suffered a "blackout" collapse and loss of consciousness. Described a heart burn type chest pain radiating to the neck and worse on exertion with relief on rest. Smokes 15 daily for 30 years
- Current inpatient

- Investigations
- ECG new ejection systolic murmur and T wave invertion
- Troponin elevated (very high)
- ECHO

- Diagnosis
- ACS
- Calcified aortic valve with evidence of severe AS
- Undilated LV with good systolic contraction
- Mild concentric LVH
- Normal MV
- Normal PV
- Normal TV

CASE STUDY 2 - MEDICATIONS

		ON	ICE ONLY	PRESCRIP	TIONS					
Date	Time	Medicine	Dose	Route	Prescribed By (signature / print name)	Time Given	Given By	CARE ISS Action / Outcome	Initiais	1740
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15/3/23	2345	TICAENECON	1805	01	C.	2350	N	Fondeperin X - continued up to max 8 doks in total		
15/3/2	2345	FORDAPARIANS	2.50	52	Sa	232	1 juli	- likes to be carried to - as it as since lit	W	18/5
(6 3 23	06:30	OMEPHANLE	ZOMG	onn	Hen	0130	M			
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253	15-15	Fentany	ZEmcg	NV.		1520	饭			
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2/05/23	STAT	Hepanin	5000 ,	is IA	LAL	152	1. A			U
2/05/23	Ser	die Amilaque	2 100m1	1000	por l'	hu				
22/05/2	STA	GTN 1	and	1A		1530	1. T			
22/05/5	STAT	GTN	Ing	K		1535	1.0			
			$\left \right\rangle$							
							La caracter			

CASE STUDY 2 - MEDICATIONS

- Medications
- Aspirin
- Ticagrelor
- Fondaparinux
- Omeprazole
- Midazolam
- Fentanyl
- Lidocaine
- Heparin
- GTN

Surgery required
AVR and CABG X 3

CASE STUDY 2 – DENTAL ASSESSMENT



CASE STUDY 2 – TREATMENT PLAN

- Nil, no treatment deemed essential. Patient aware that routine dental and hygiene appointments required to maintain oral health.
- What considerations would be required if this patient needed any treatment?
- Bleeding risk
- Antibiotic cover

CASE STUDY 2 - CONSIDERATIONS

Has this patient had a heart attack?

Hello

He had an MI but he has been very stable since

I don't think he requires antibiotics looking at the SDCEP guideline (he does not fall into the sub-group requiring special consideration)

Thanks Adelle Dawson

Is it appropriate for the patient to be treated in primary care?

SUMMARY

- 1) GATHER ALL PATIENT INFORMATION is there a cardiac condition that warrants a dental assessment/treatment prior to cardiothoracic surgery
- 2) APPROPRIATE RADIOGRAPHS AND ASSESSMENT OPT justified for all patients +/intraoral radiographs if required. Use the Golden Jubilee Protocol to aid assessment
- 3) HAVE YOU CONSIDERED THE NATURE, SEVERITY AND SATBILITY OF THE PATIENT'S OVERALL MEDICAL CONDITIONS?
- 4) HAVE YOU CONSIDERED BLEEDING RISK AND NEED FOR ANTIBIOTIC PROPHYLAXIS?

SUMMARY

- IF IN DOUBT ASK
- SPECIAL CARE DENTISTRY DEPARTMENT
- SENIOR DENTAL OFFICERS
- CLINICAL NURSE SPECIALIST
- DOCTORS ON WARD
- GMP IF OUTPATIENT

•ANY QUESTIONS ABOUT DENTAL ASSESSMENT FOR CARDIAC PATIENTS?

• END OF PART 1

• COFFEE BREAK

DENTAL ASSESSMENT OF CARDIOTHORACIC SURGERY AND HAEMATOLOGICAL **MALIGNANCY PATIENTS**

PART 2

DENTAL ASSESSMENT AND TREATMENT FOR PATIENTS WITH HAEMATOLOGICAL MALIGNANCIES

COMMON HAEMATOLOGICAL MALIGNANCIES

- Leukaemia
- acute lymphocytic leukaemia (ALL)
- chronic lymphocytic leukaemia (CLL)
- acute myeloid leukaemia (AML)
- chronic myeloid leukaemia (CML)
- Myeloma
- Lymphoma
- Hodgkins
- Non-Hodgkins



WHY IS DENTAL ASSESSMENT REQUIRED?

- Complications in the oral cavity commonly arise as a result of malignancy and/or the undesirable effects of its treatment. The prevalence, extent, severity and longevity of the complications depend on the regime of cancer therapy regime and its intensity.
- Complications may include profound functional and sensory changes to the oral mucosa, in addition to an increased susceptibility to dental caries and periodontal disease.
- These may impact directly on cancer therapy resulting in the need to pause treatment, but also have a significant impact on the longevity and quality of life during and after cancer therapy.

RELEVANT GUIDELINES



British Society for Disability and Oral Health

The Oral Management of Oncology Patients Requiring Radiotherapy, Chemotherapy and / or Bone Marrow Transplantation

Clinical Guidelines

Updated 2018

The Royal College of Surgeons of England / The British Society for Disability and Oral Health It has been suggested that dental teams should assess the patient approximately one month before cancer treatment begins in order to allow urgent dental treatment to be arranged and to subsequently ensure adequate time for recovery from any required invasive dental procedures (see section 2.12) (Bos-den Braber *et al.*, 2015) (Abdullah, 2014) (McCaul, 2012) (Shaw *et al.*, 2000).

RELEVANT GUIDELINES

2.1.2. Oral / Dental Assessment:

Prior to commencement of cancer therapy, an oral / dental assessment including radiographs, must be undertaken (Elad *et al.*, 2015). The specific aims are to:

- Identify existing oral disease and potential risk of oral disease.
- Remove infectious dental / oral foci before the start of cancer therapy.
- Prepare the patient for expected side effects of cancer therapy.
- Establish an adequate standard of oral hygiene to meet the increasing challenges during cancer therapy.
- Develop a plan for maintaining oral hygiene, providing preventive care, completing oral rehabilitation and follow-up.
- Establish the necessary multidisciplinary collaboration within the cancer centre to reduce / alleviate oral symptoms and sequelae before, during and after cancer therapy.

TREATMENT PLANNING

- Uncontrolled periodontal disease
- Pus on probing
- Recurring and chronic periodontal abscessed
- Grade III mobility
- Bleeding pockets >4mm
- Furcation lesions
- Abscessed teeth
- Traumatic teeth

- Root filled teeth
- Symptomatic
- Inadequate endodontic therapy
- Associated periapical pathology
- Periapical pathology evident radiographically

Recurrent pericoronitis

• Ill-fitting dentures

 All required dental treatment should be completed more than 14 days before stem cell treatment/chemotherapy/radiotherapy is due to begin to allow for healing of sockets and to ensure no post operative infection is present.

TABLE 4: MANAGEMENT GUIDELINES RELATIVE TO INVASIVE DENTAL PROCEDURES

Medical Status	Guidelines Available	Comments
Patients with indwelling venous access lines (e.g., Hickman).	American Heart Association (AHA) prophylactic antibiotic recommendations: Low risk	There is no clear scientific proof detailing infectious risk for these lines following dental procedures.
Neutrophils Order FBC (full blood cor	unt) with differential.	
>2,000/mm ³	AHA prophylactic antibiotic recommendations: No prophylactic antibiotics.	
1,000–2,000/mm ³	AHA prophylactic antibiotic recommendations: Low risk.	Liaise with the oncologist Clinical judgment is critical. If infection is present or unclear, more aggressive antibiotic therapy may be indicated.
<1,000/mm ³	AHA prophylactic antibiotic recommendations: Amikacin 150mg/m ² 1 h pre-surgery; ticarcillin 75 mg/kg IV ½ h pre-surgery. Repeat both 6 h postoperatively.	The antibiotic regimen suggested by AHA is not used widely in the U.K. where amoxicillin / clindamycin are more often used. Liaise with the oncologist If organisms are known or suspected, appropriate adjustments should be based on sensitivities.

Table 4 contd.

Medical Status	Guidelines Available	Comments			
Platelets * Order platelet count and coagulation tests.					
>60,000/mm ³	National Cancer Institute guidelines (www.cancer.gov) No additional support needed.	Major surgery may require platelet supplementation			
30,000–60,000/mm ³	Platelet transfusions are optional for non-invasive treatment For surgical treatment (e.g., dental extractions), consider administering platelets preoperatively and 24 h later	Liaise with the oncologist Platelet requirements will also depend on the extent of the surgery required / need for block injections Utilise techniques to promote establishing and maintaining control of bleeding (i.e. sutures, pressure packs, minimise trauma).			
<30,000/mm ³	Platelets should be transfused 1 h before procedure Obtain an immediate post-infusion platelet count; transfuse regularly to maintain counts >30,000– 40,000/mm ³ until initial healing has occurred. In some instances, platelet counts >60,000/mm ³ may be required.	In addition to the above, consider using haemostatic agents (i.e., microfibrillar collagen, topical thrombin). Tranexamic acid may help stabilise nondurable clots. Monitor sites carefully.			

*Assumes that all other coagulation parameters are within normal limits and that platelet counts will be maintained at or above the specified level until initial stabilization/healing has occurred

If your patient needs to communicate in a mode or	
language other than English please specify:	
Please state whether an accompanying person can translate or if an interpreter will be needed:	
	the second
Name of contact person:	Relationship / status e.g. relative / key worker /
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Clinical Reason for Referral	
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closures (e.g. radiographs, :	study models, photographs)				
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ned (Clinician)	np	· (Date 16.6	23	
EDDING OD ACTUTION				North and Sand	and particular

61 year old male,

- presented to A+E with 1 day history of right sided abdominal pain. No weight loss and not noticed any lumps. Examination found a 20-30cm mass which was his spleen.

- Outpatient

- Diagnosis
- Acute myeloid leukaemia (AML)
- Medications

-Azacitadine, Ruxolitinib, Omeprazole, Ciprofloxacine, Ondanzatron, Calichew

Treatment

- Chemotherapy
- Allograft stem cell transplant

Dear Dr,	Transcribed Date:	31/07/2023
	CHI:	
The provisional date for admission Glasgow for Stem cell transplant is date may be changed if there are a	n of your patient to Ward 4B, Queen Elizabe s 6th of September 2023. However, there is unforeseen changes to our bed plan.	th University Hospital, the possibility that this
Before admission they will require t to our generic consultant email at two weeks prior to the patient's ad	he following investigations/procedures and res ggc.glasgowbmtconsultants@nhs.scot for mission date, please:	sults should be emailed or my attention at least
 Full Pulmonary function tests Echocardiogram, 24-hour uring collection for Or 	eatinine Olearance,	
 Dental review and treatment of Appropriate and of treatment 	completed within 2 weeks of admission.	n

- Hickman line inserted prior to admission
- Pre admission COVID PCR 48-72hrs prior to admission

CASE STUDY 3 – DENTAL ASSESSMENT



CASE STUDY 3 – DENTAL ASSESSMENT



CASE STUDY 3 – TREATMENT PLAN

- XLA UL6,8, LL6
- Restore UR1m, UL1m, UL7b, LL7m, LR7m
- Scale and polish

CASE STUDY 3 - CONSIDERATIONS

- What is the patient's platelet level?
- What is the patient's neutrophil level?
- How will the patient be able to attend their dental appointments?

CASE STUDY 3 – BLOOD RESULTS ONE WEEK BEFORE DENTAL APPOINTMENT

Test Item	Value	Units	Normal Values	Flag
HB	94	g/l	140 - 180	Low
RBC	3.0	x10^12/l	5.0 - 6.0	Lw
НСТ	0.27	1/1	0.42 - 0.54	Low
MCV	92	fl	83 - 98	Ν
MCH	32	pg	27 - 32	N
PLT	45	x10^9/l	140 - 400	Low
WBC	2.0	x10^9/l	4.0 - 10.0	Low
NEUT	1.1	x10^9/l	1.5 - 7.0	Lw
EOS	0.00	x10^9/l	0.1 - 0.5	Lw
BASO	0.01	x10^9/l	0.01 - 0.10	N
LYMPH	0.6	x10^9/l	1.0 - 4.0	Lw
MONO	0.2	x10^9/l	0.2 - 0.8	Ν
Retics	90.7	x10^9/l	43 - 119	Ν

CASE STUDY 3 – BLOOD RESULTS ONE <u>DAY</u> BEFORE DENTAL APPOINTMENT

Test Item	Value	Units	Normal Values	Flag
НВ	100	g/l	140 - 180	Low
RBC	3.1	x10^12/l	5.0 - 6.0	Lw
НСТ	0.29	1/1	0.42 - 0.54	Low
MCV	94	fl	83 - 98	Ν
MCH	32	pg	27 - 32	Ν
PLT	78	x10^9/l	140 - 400	Low
WBC	2.4	x10^9/l	4.0 - 10.0	Low
NEUT	1.3	x10^9/l	1.5 - 7.0	Lw
EOS	0.01	x10^9/l	0.1 - 0.5	Lw
BASO	0.14	x10^9/l	0.01 - 0.10	Hgh
LYMPH	0.8	x10^9/l	1.0 - 4.0	Lw
MONO	0.1	x10^9/l	0.2 - 0.8	Lw

Clinical Reason for Referral	
Patient is due to have stem cell transplant for relapsed Lymphoma	
	Special Care Dentistry Referral Form Page 2
	If unable to print form double sided, then please re-enter
	Please re-enter patient's name & DoB
	Further Information Please tick
	Access Medical complications Anxiety / phobia
	Learning disability Mental Illness
Summary of Special Care Need	Does the person go out at all? Yes 🛛 No
has a fear of the dentist and his teeth look to be in very poor condition. He is diagnosed	Living arrangements: Alone 🛛 With family 🗌 In care
schizophrenic. He is a very pleasant compliant patient with low litracy levels	Mobility: Walks unaided 🛛 Needs walking aid 🗌 Wheelchair user 🗌 Bedbound 🗌
	Does patient have capacity for consent Yes 🛛 No 🗌
	If no please enter details of Welfare Guardian
	Name Contact Number
	Help that you can provide
and the set of the set	Please include details of dental care that you are able to provide e.g. prevention, as well as your referral request
Medical history Please list all current medications taken and any specialist medical clinics attend	
Lymphoma treated with chemotherapy	
Schizophrenia	Enclosures (e.g. radiographs, study models, photographs)
	Would you like these returned? Yes No
	Is the patient registered at your practice? Yes No
	Please mark box to confirm I confirm this nation referral comes within the current referral quidelines issued by NHS Grampian Dental Services
Commence of and backbo data to a series and and busines)	
Summary of oral health status (e.g. carles and oral hygiene)	Print Name of Referring Tricia Ferguson
very poor	
	Signed (Gimcian) Date 19/06/2023
	DECEMPTING DRACTITIONED

Reason for Referral

48 year old male, outpatient

CASE STUDY 4

Diagnoses

- Grade 1/2 follicular lymphoma stage 2E Non-Hodgkin's Lymphoma
- 6 cm mass infiltrating left parotid
- Chronic schizophrenia.
- Medications
- clozapine, risperidone, omeprazole

Treatment

- Planned treatment 6 x R-CHOP + local radiotherapy +/- autologous stem cell transplant
CASE STUDY 4



CASE STUDY 4



CASE STUDY 4 – TREATMENT PLAN

- Full dental clearance
- Modality of treatment?

CASE STUDY 4 - CONSIDERATIONS

- What is the patient's platelet level?
- What is the patient's neutrophil level?

CASE STUDY 4 – BLOOD RESULTS

Test Item	Value	Units	Normal Values	Flag
HB	123	g/l	140 - 180	Lw
RBC	4.0	x10^12/l	5.0 - 6.0	Lw
HCT	0.37	1/1	0.42 - 0.54	Lw
MCV	93	fl	83 - 98	Ν
MCH	31	pg	27 - 32	Ν
PLT	383	x10^9/l	140 - 400	Ν
WBC	2.4	x10^9/l	4.0 - 10.0	Low
NEUT	0.4	x10^9/l	1.5 - 7.0	Low
EOS	0.00	x10^9/l	0.1 - 0.5	Lw
BASO	0.03	x10^9/l	0.01 - 0.10	Ν
LYMPH	1.2	x10^9/l	1.0 - 4.0	Ν
MONO	0.8	x10^9/l	0.2 - 0.8	N

CASE STUDY 4

- Platelets were 383 and neutrophils were 0.4
- The patient was neutropaenic (neutrophils <1)
- Decision made to postpone the treatment and liaised with CNS to organise another appointment.
- The CNS advised his bloods will be at their best 3 weeks after his next chemotherapy infusion so we will try again then.

ANY QUESTIONS REGARDING HAEMATOLOGICAL MALIGNANCY PATIENTS?

SUMMARY

- Assessment including appropriate radiographs needed ASAP after initial diagnosis
- Blood tests required ideally 24 hours before dental appointment
- Consider platelet infusion before invasive dental procedures
- Consider antibiotic prophylaxis as per RCS Guidelines and discuss with oncology team
- Dental treatment should be completed at least 2 weeks before any cancer treatment is started.
- It is gold standard to review a patient after 2 weeks to ensure they are healing after extractions.

THINGS TO TAKE AWAY FROM TODAY

- Read the RCS guidance on planning/providing treatment for haematological malignancy patients.
- Liaise with the patient's oncology team, in particular the specialist nurses are the best to get quick responses and know their patients well.
- Do not treat a patient if you are not happy with a treatment plan or their blood results. Do not feel pressured into treating a patient by a medical clinician.
- IF IN DOUBT SEEK ADVICE!

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