NHS Worcestershire Acute Hospitals NHS Trust

Guideline for the management of diabetes For patients undergoing Endoscopy procedures

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline is designed to maintain adequate control of diabetes during endoscopy procedures, which may compromise glycaemic control. During periods of starvation oral hypoglycaemic drugs and insulin may cause unexpected hypoglycaemia unless adequate precautions are taken. Major stress induced by anaesthesia and endoscopy may cause marked elevations of blood glucose.

The patients covered by this guideline are all patients with diabetes who undergo endoscopy within Worcestershire Acute Hospitals NHS Trust. This guideline replaces WAHT-END-005 which previously covered both endoscopy and elective surgery for patients with diabetes. Guidance for management of diabetes in patients undergoing elective surgery has been removed from the document.

The following guideline should be referred to for those undergoing elective surgical procedures: Guideline for the perioperative management of diabetes for Adult patients undergoing elective surgery (WAHT-ANA-019)

This guideline is for use by the following staff groups:

All trained medical staff, nursing staff, and radiographers involved in procedures should be aware of the guidelines and the need for glycaemic stability. These guidelines should be endorsed by the individual departments who carry out the procedures.

Lead Clinician(s)

Natalie Trigg	Inpatient DSN Alexandra Hospital
Alison Hall	Lead Nurse Diabetes
Approved by the Diabetes Directorate	1st July 2020
Approved by Medicines Safety Committee on:	9th September 2020
Review Date:	9th December 2023

This is the most current document and should be used until a revised version is in place

Key amendments to this guideline

Date	Amendment	By:
May 2013	This guideline replaces WAHT-END-005 which previously covered both endoscopy and elective surgery for patients with diabetes. Guidance for management of diabetes in patients undergoing elective surgery has been removed from the document. The following guideline should be referred to for those undergoing elective surgical procedures: Guideline for the perioperative management of diabetes for Adult patients undergoing elective surgery (WAHT-ANA-019). This guideline concerns endoscopic procedures only.	Dr D Jenkins
March 2016	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
August 2017	Document extended for 6 months as per TMC paper approved on 22nd July 2015	TMC
December 2017	Document extended for 3 months as per TLG recommendation	TLG
March 2018	Document extended for 3 months as approved by TLG	TLG
June 2019	Document extended for 6 months whilst review and approval process	Alison Hall
July 2020	Basal insulin reduction reduced from 50% to 20%	Natalie Trigg
	Insulin types updated in glossary to include Toujeo, Abasaglar and Semglee	
	GLP-1 Agonists updated in glossary to include Trulicity and Ozempic	
	Included comment to consider CVRIII if more than one meal to be missed, or if two BG levels >15mmol/l	
October 2023	Document extended for 3 months	Alison Hall Karen Macpherson

Colonoscopy/Sigmoidoscopy Requiring Full Bowel Preparation for Patients with Insulin Treated Diabetes

Instructions for the day before the colonoscopy:

Basal-bolus regimen (injections 3 or more times a day)

Give half the usual rapid acting insulin doses with each meal (eg. **Novorapid®, Humalog®).** Continue the usual dose of long acting insulin (e.g. **Lantus®)** if taken in the morning, but reduce the dose by 20% if taken in the evening.

If on a once or twice daily insulin regimen, take **half** the usual dose of insulin.

The instructions for bowel preparation should be followed. Some of the oral fluids contain glucose e.g. apple juice, Lucozade or squash (not sugar-free).

Instructions for the day of colonoscopy:

Basal-Bolus regimens (Injections 3 or more times a day)

Before the procedure:
For those taking long-acting insulin (e.g. **Lantus®, Levemir®**) in the morning, reduce the usual dose by 20%. For those taking rapid acting insulin (e.g. **Novorapid®, Humalog®**) with breakfast, omit this before the test.

After the procedure: Give the rapid acting insulin with the first meal following the procedure. The usual basal dose of insulin should be given in the evening.

Insulin: Twice daily regimens

Mixed insulin injections twice a day (e.g. **Novomix 30®, Humalog Mix 25®** or **50®**)

Before the procedure: Half the usual morning dose of insulin should be given.

After the procedure: The usual evening dose of insulin should be given.

Insulin: Once daily regimens (Injections once a day, e.g. **Insulatard®, Humulin I®**)

A 20% reduction of the usual dose of insulin should be given if taken in the morning. The usual dose should be given if the insulin is taken in the evening.

If there is any doubt or concern, the local diabetes specialist nurse or consultant should be contacted for advice.

If more than one meal is to be missed, or there are two consecutive blood glucose levels above 15mmol/l, consider commencing CVRIII.

Colonoscopy/Sigmoidoscopy Requiring Full Bowel Preparation for Patients with Diabetes Treated With Tablets and/or a GLP-1 Agonist

The day before the test

The usual diabetes treatment should be omitted.

The instructions for bowel preparation should be followed. Some of the oral fluids contain glucose e.g. apple juice, lucozade or squash (not sugar-free).

The day of the test

The usual diabetes treatment should be omitted in the morning. Fluids (including some that contain glucose) should be drunk. It is recommended that blood glucose is checked every 2 hours from waking until the test.

After the test

Usual diabetes treatment should be resumed.

If there is any doubt or concern, the local Diabetes Specialist Nurse or consultant should be contacted.

Worcestershire Acute Hospitals NHS Trust

Upper Gastrointestinal Endoscopy (OGD) in Patients with Insulin-Treated Diabetes

Instructions for on the day of the procedure:

Basal-Bolus regimens (Injections **3 or more times** a day)

Before the procedure

For those taking long-acting insulin (e.g. **Lantus®, Levemir®**) in the morning, reduce dose by 20%.

For those taking a rapid acting insulin (e.g. **Novorapid®, Humalog®**) with breakfast, the rapid acting insulin should be omitted.

Capillary blood glucose should be checked at least every two hours until the end of the procedure.

If on an afternoon list, and therefore able to eat breakfast, give usual dose of rapid acting insulin with breakfast, but omit the lunchtime dose.

After the procedure

Usual insulin treatment should be resumed.

Twice daily regimens

Mixed insulin injections twice a day (e.g. **Novomix 30®, Humalog Mix 25®** or **50®**)

Before the procedure

Half the usual morning dose of insulin should be given. Capillary blood glucose should be checked at least every two hours until the end of the procedure.

After the procedure

Usual insulin treatment should be resumed.

Once daily regimens

Injections once a day (e.g. **Insulatard®, Humulin I®**)

If taken in the morning, half the usual dose of insulin should be given. If taken in the evening, the usual dose of insulin should be given. Capillary blood glucose should be checked at least every two hours until the end of the procedure.

If there is any doubt or concern, the local diabetes specialist nurse or consultant should be contacted for advice.

If more than one meal is to be missed, or there are two consecutive blood glucose levels above 15mmol/l, consider commencing CVRIII.

Upper Gastrointestinal Endoscopy (OGD) In Patients With Diabetes Treated With Tablets and/or GLP-1 Agonists

Instructions for on the day of the procedure.

Omit the morning dose of the diabetes drug. Take the usual dose of the diabetes drug when able to eat after the procedure. It is recommended that capillary blood glucose is checked every 2 hours from waking until the test.

If there is any doubt or concern, the local diabetes specialist nurse or consultant should be contacted for advice.

Monitoring Tool

How will monitoring be carried out?	Audit of drug charts, fluid charts and blood glucose records in those undergoing major surgery.
When will monitoring be carried out?	Annual audit suggested.
Who will monitor compliance with the guideline?	Endoscopy divisional medicines management audit plan

Standards:

Item	%	Exceptions
Has guideline been followed?	100	
Audit of hypoglycaemia during medical interventions at WAHNHS Trust.	0	

References

- Surgery in patients with diabetes mellitus. G. Gill in Textbook of Diabetes. Eds. Pickup JC, Williams G. 2nd edition 1997 Blackwell Science
- Management of adults with diabetes undergoing surgery and elective procedures: improving standards, summary. NHS Diabetes 2016

Contribution List

Key individuals involved in developing the document

Name	Designation
Dr Irfan Babar	Consultant Physician
Miss Alison Hall	Lead Nurse for Diabetes
Mrs Natalie Trigg	Diabetes Specialist Nurse

Circulated to the following individuals for comments

Name	Designation
All diabetes directorate members	
Loraine Mahachi	JAG/ Governance sister, Endoscopy
Endoscopy units at Alex and WRH	

Circulated to the following CD's/Heads of dept for comments from their directorates / departments

Name	Directorate / Department
As above	

Glossary:

Once daily insulin: Refers to an insulin regimen in which a long-acting insulin (e.g. Insulatard®, Humulin I®, Insuman Basal®, Levemir®, Lantus®, Tresiba®, Toujeo®, Abasaglar®, Semglee®) is given once daily. This is usually administered at bed-time or at breakfast. It may be combined with oral hypoglycaemics such as metformin.

Twice daily insulin: Refers to an insulin regimen in which an insulin mixture (e.g. Humulin M3®, Novomix 30®, Humalog Mix 25®, Humalog Mix 50®, Insuman Comb 25®) is administered with breakfast and again with the evening meal.

Basal-bolus regimen: Refers to an insulin regimen in which a long-acting (basal) insulin is given once daily and rapid-acting insulin (bolus) is given with meals.

Appendix

GLP-1 agonists: Byetta®, Victoza®, Lyxumia®, Bydureon®, Trulicity® and Ozempic®. These are given by injection but are not insulin. They rarely cause hypoglycaemia.

Rapid acting insulins: Novorapid®, Humalog®, Apidra®, Hypurin Bovine Neutral®, Hypurin Porcine Neutral®. Usually injected with meals as part of a basal-bolus regimen.

Insulin Mixtures: Humulin M3®, Novomix 30®, Humalog Mix 25®, Humalog Mix 50®, Insuman comb 15®, Insuman comb 25®, Insuman comb 50®. Usually injected once, twice or three times daily before a meal.

Long-acting insulins: Humulin I®, Insulatard®, Insuman Basal®, Hypurin Porcine Isophane®, Hypurin Bovine Isophane®, Lantus®, Levemir®, Tresiba®, Toujeo®, Abasaglar® and Semglee®. Usually given once or twice daily as part of a basal-bolus regimen or as a once daily insulin in combination with another diabetes drug.

Supporting Document 1 - Equality Impact Assessment Tool

. To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	x	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
	Alison Hall	**Lead Nurse Diabetes**	**Alison.hall24@nhs.net**
Date assessment completed	**02/08/2020**		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title: Guideline for the management of diabetes For patients undergoing Endoscopy procedures**
What is the aim, purpose and/or intended outcomes of this Activity?	Reduce the risk of harm for patients undergoing endoscopic procedures by managing diabetes effectively.
Who will be affected by the development & implementation of this activity?	☑ Service User ☑ Patient ❑ Carers ❑ Visitors ☑ Staff ❑ Communities ❑ Other ____________________ ❑
Is this:	☑ Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?

What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	The National inpatient diabetes team recognises the risk of harm when patients are undergoing surgical or endoscopic procedures. They requires service providers to have assessed the risk and provided guidance on how to reduce the risk of adverse events associated with diabetes by providing guidance to non-diabetes specialists.
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	Diabetes directorate, specialty medicine division and endoscopy teams through meetings and discussion.
Summary of relevant findings	The current guidance needs simplifying and as new treatments for diabetes have become available additional information on use of oral and injected medication is required.

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		x		
Disability		x		
Gender Reassignment		x		
Marriage & Civil Partnerships		x		
Pregnancy & Maternity		x		
Race including Traveling Communities		x		
Religion & Belief		x		
Sex		x		
Sexual Orientation		x		

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)		X		
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		X		

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	**When guideline is next reviewed or when changes are required due to diabetes management changes.**			

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	
Date signed	02/08/2020
Comments:	
Signature of person the Leader Person for this activity	
Date signed	02/08/2020
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	**Yes/No**
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.