Worcestershire NHS
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)

Dr. D. Jenkins	Consultant Diabetologist
Approved by the Worcestershire Secondary Care Diabetes Group:	18th June 2013
Approved by Medicines Safety Committee on:	14th January 2014
Extension approved by TMC on:	6th December 2017
This guideline should not be used after end of:	6th March 2018

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

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

Instructions for the day before the colonoscopy:

For patients taking a basal-bolus regimen (injections **3 or more times** a day) **omit the short acting insulin** (eg. **Novorapid®, Humalog®)** because of fasting, but continue the long acting insulin (e.g. **Lantus®)** at **half** the usual dose.

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

Instructions for the day of colonoscopy:

Insulin: 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 give half the usual dose. For those taking short-acting insulin (e.g. **Novorapid®, Humalog®**) with breakfast, omit this before the test.

After the procedure: Give the short-acting insulin with the first meal. The evening insulin should be given as usual.

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®**) **Half** the usual dose of insulin should be given if taken in the morning. The full 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.

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.

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

Instructions for on the day of the procedure:

Insulin: 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, half the usual dose of insulin should be given.. For those taking a short-acting insulin (e.g. **Novorapid®, Humalog®**) with breakfast, the short-acting insulin should be omitted. 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.

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. 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.

Insulin: 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.

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. NHS Diabetes 2011.

Contribution List

Key individuals involved in developing the document

Name	Designation
Dr. P. Newrick	Consultant Physician
Mrs. E. Innes	Diabetes Specialist Nurse
Mrs R. Leese	Lead Pharmacist Diabetes
Ms. K. Hinton	Endoscopy Nurse
Mrs. S. Rogers	Diabetes Specialist Nurse
Mrs. R. Dunkley	Lead Dietician for Diabetes

Circulated to the following individuals for comments

Name	Designation
Mr. S. Lake	Consultant Surgeon
All endoscopy users group members	
All Diabetes Directorate members	
Endoscopy Units at WRH and Alex	
Senior Radiographers at WRH and Alex	

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® (Detemir), Lantus® (Glargine), Tresiba® (Degludec)) 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® (twice daily); Victoza®, Lyxumia® (once daily) and Bydureon® (once weekly). These are given by injection but are not insulin. They rarely cause hypoglycaemia.

Rapid acting insulins: Novorapid®, Humalog (Lispro)®, Apidra® (Glisuline), Hypurin Bovine Neutral®, Hypurin Porcine Neutral® and Actrapid®. 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® (Glargine), Levemir® (Detemir), Tresiba® (Degludec). 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 attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	Race	No	
	Ethnic origins (including gypsies and travellers)	No	
	Nationality	No	
	Gender	No	
	Culture	No	
	Religion or belief	No	
	Sexual orientation including lesbian, gay and bisexual people	No	
	Age	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	No	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources

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