Improving the perioperative pathways of patients with diabetes (IP3D)

An audit of current practice prior to the introduction of the IP3D at East Sussex Healthcare NHS Trust

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Aims and background

"To determine whether outcomes for patient with diabetes undergoing elective surgery improve following the introduction of innovations in the peri-operative care pathway"

NCEPOD **Highs and Lows**
A review of the quality of care provided to patients over the age of 16 who had diabetes and underwent a surgical procedure
A report published by the National Confidential Enquiry into Patient Outcome and Death (2018)

Methods

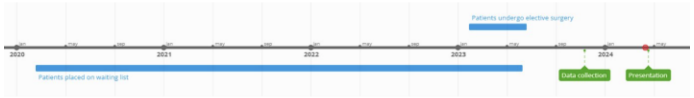
1. Baseline audit (n=185)
2. Implementations
   - Diabetes peri-operative passport
   - Diabetes peri-operative specialist nurse
   - Diabetes surgery steering group
   - Diabetes peri-operative champions
   - Diabetes surgical study days
3. Re-audit (n=166)

Baseline audit: methods

- 60 diabetic patients listed for major surgery at ESHT (cross-site)
- Data collection on various aspects of perioperative diabetes management:
  - ➢Basic demographics
  - ➢Quality of referral
  - ➢Pre-operative assessment
  - ➢Day of operation
  - ➢Inpatient care
  - ➢Complications

Sample

- 60 diabetic patients listed for major surgery
  - 51 T&O
  - 9 General Surgery

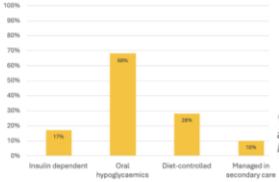


- Timeline
  - Placed on waiting list 17/02/2020 - 09/06/2023 (P2 – P4)
  - Operations between 17/01/2023 - 19/06/2023 (date determined the sample)
  - Data collected November 2023 (retrospective)

Findings

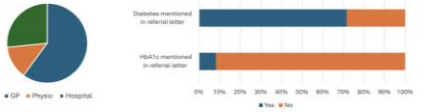
Basic demographics

- M:F 31:29
- Mean age 72 (53-92)
- 58 (97%) type-2 diabetes
- Mean HbA1c pre-op: 50.2mmol/mol
- 6 (10%) managed in secondary care
- Management
  - 10 (17%) insulin dependent
  - 41 (68%) oral hypoglycaemic agents
  - 17 (28%) diet controlled



Quality of referral

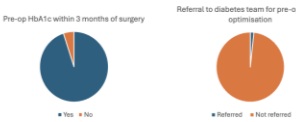
- Referrer: 36 GP, 8 physio, 16 hospital
- Diabetes mentioned in referral letter: 43/60 (72%)
- HbA1c mentioned in referral letter: 5/60 (8%)



"Use a standardised referral process for elective surgery to ensure appropriate assessment and optimisation of diabetes. This should include satisfactory HbA1c levels within 3 months of referral and a list of all current medications"

Pre-operative assessment

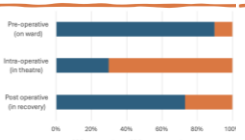
- Number of cancellations: 8/60 patients - 10 total cancellations
- Referral to diabetes team for optimisation: 1/60 = 1.6%
- HbA1c pre-op or within 3 months of operation: 57/60 = 95%



"Cancellation of elective surgery in patients with diabetes should be avoided, particularly for known clinical reasons. Cancellation rates should be audited locally and the results acted upon."

Day of operation

- First third of the list: 48% (29/60)
- VRIII: 3.3% (2/60)
- CBG measurement
  - Pre-op 90% (54/60)
  - Intra-op 30% (18/60)
  - Post-op 73% (44/60)



"Prioritise patients with diabetes on the operating list to avoid prolonged starvation."

"Ensure that patients with diabetes undergoing surgery are closely monitored and their glucose levels managed accordingly. Glucose monitoring should be included:
a. at sign-in and sign-out stages of the surgical safety checklist (e.g. WHO safety checklist)
b. in anaesthetic charts
c. in theatre recovery
d. in early warning scoring systems"

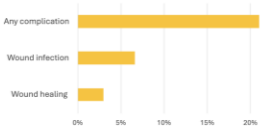
Inpatient stay

- Diabetes management
  - Hypos <4.0: 10% of patients (6/60) - 14 total episodes
  - Hypers >16.9: 13% of patients (8/60) - 12 total episodes
  - DKA/HHS: none
- Inpatient diabetes team reviews: 10% (6/60)
- Mean length of stay: 6.27 days (range 3 – 26, SD 4.85)

"Develop and implement referral criteria for surgical inpatients with diabetes to diabetes specialist nurses and other diabetes multidisciplinary team members as required"

Complications

- Any complication: 21%
  - Including AKI, HAP, ileus, incisional hernia, joint infection
  - Wound infection: 6.6% (4/60)
  - Wound healing: 3.3% (2/60)
- Mortality
  - During admission: 0/60
  - 30-day: 1/60
- 30-day readmission 0/60



Conclusions

Summary: key findings

- HbA1c rarely included in referral letter – 8%
- Few patients (1.6%) referred to diabetes team pre-operatively for optimisation - despite a high rate of cancellations (13%)
- A (near) minority of patients on first third of operating list (48%)
- Few patients (30%) had intraoperative glucose measurements
- Few patients had inpatient diabetes team reviews (10%)
  - 10% with hypoglycaemic events
  - 13% with hyperglycaemic events

Limitations

- Retrospective data collection from multiple systems with reliance on accurate documentation – particularly:
  - Intraoperative blood glucose measurement (possibly because it was rarely done!)
  - Wound infection/dehiscence or other complications
- Sample based on patients who had an operation
  - Will not pick up those who have been cancelled repeatedly because of poorly controlled diabetes
  - Limits interpretation of pre-operative assessment data

Audit recommendations

- Improve referrals from primary care to include HbA1c, comorbidities, management
- Diabetic patients on the first third of the operating list
- Capillary glucose measurements
  - On arrival to ward
  - At least hourly intra-operatively
  - In recovery
- Diabetes perioperative passport to facilitate safe handover of diabetic patients between teams
- Staff education on ward-based management of diabetes and criteria for referral to inpatient diabetes team