Management and Outcomes of Perioperative Care among European Diabetic Patients: (MOPED): A prospective observational, international cohort study

DEFINITIONS OF OUTCOMES

The occurrence of any adverse outcome is assessed at:

- post-operative Day 1
- Discharge Day
- post-operative Day 30 (by phone call if patient has been discharged).

If the surgery was carried out as a day case, the only follow up is on Day 30.

Note that there is some flexibility in date of this data collection. For example, if Day of Discharge or Day 30 falls on a weekend, data may be collected the next working day.

On the Discharge Day and Day 30 follow-up, please check:

1. If the patient has had anything on the Post Operative Morbidity Score (POMS) (see Table 1 below)
2. What was the impact of any morbidity on the Clavien-Dindo Scale? (see Table 2 below). To calculate the score, please use https://www.assessurgery.com/clavien-dindo-classification/
3. Then please calculate the Comprehensive Complications Index (see Appendix 14 - How to calculate the Comprehensive Complications Index (CCI) score and Figure 1 below).

If there is any doubt about the definition of a postoperative complication, please refer to Appendix 2 of the EPCO definitions statement (referenced below and see Tables 1, 2 and 3):

Jammer I et al. European Perioperative Clinical Outcomes (EPCO) Definitions. Eur J Anaesthesiol 2015;32:88-105

***Table 1**: Single organ outcome measures: Acute Kidney Injury*

1. Single organ outcome measures

1.1 Acute Kidney Injury (AKI)

Definition. Kidney Disease Improving Global Outcomes (KDIGO) guidelines[17] (Table A2.1.1).

Table A2.1.1 Kidney Disease Improving Global Outcomes Guidelines (KIDGO)

Stage	Serum creatinine	Urine output
1	1.5–1.9 times baseline value within 7 days	$\leq 0.5\,ml\,kg^{-1}\,h^{-1}$ for 6–12 h
	or	
	$\geq 27\,\mu mol\,l^{-1}$ (0.3 mg dl^{-1}) increase within 48 h	
2	2.0–2.9 times baseline value within 7 days	$\leq 0.5\,ml\,kg^{-1}\,h^{-1}$ for 12 h
3	3.0 times baseline within 7 days	$\leq 0.3\,ml\,kg^{-1}\,h^{-1}$ for 24 h
	or	or
	Increase in serum creatinine to $\geq 354\,\mu mol\,l^{-1}$ ($\geq 4.0\,mg\,dl^{-1}$ with an acute rise of $> 44\,\mu mol\,l^{-1}$ (0.5 mg/dl^{-1})	Anuria for 12 h
	or	
	Initiation of renal replacement therapy	
	or	
	In patients < 18 years, decrease in eGFR to $< 35\,ml\,min^{-1}$ per $1.73\,m^2$	

***Table 2**: Postoperative pulmonary complications*

Table A2.2.2 Postoperative pulmonary complications

Complication	Definition
Respiratory infection	Patient has received antibiotics for a suspected respiratory infection and met one or more of the following criteria: new or changed sputum, new or changed lung opacities, fever, white blood cell count $> 12 \times 10^9\ l^{-1}$
Respiratory failure	Postoperative $PaO_2 < 8$ kPa (60 mmHg) on room air, a PaO_2:FiO_2 ratio <40 kPa (300 mmHg) or arterial oxyhaemoglobin saturation measured with pulse oximetry < 90% and requiring oxygen therapy
Pleural effusion	Chest radiograph demonstrating blunting of the costophrenic angle, loss of sharp silhouette of the ipsilateral hemidiaphragm in upright position, evidence of displacement of adjacent anatomical structures or (in supine position) a hazy opacity in one hemithorax with preserved vascular shadows
Atelectasis	Lung opacification with a shift of the mediastinum, hilum or hemidiaphragm toward the affected area, and compensatory over-inflation in the adjacent non-atelectatic lung
Pneumothorax	Air in the pleural space with no vascular bed surrounding the visceral pleura
Bronchospasm	Newly detected expiratory wheezing treated with bronchodilators
Aspiration pneumonitis	Acute lung injury after the inhalation of regurgitated gastric contents

***Table 3**: PostOperative Morbity Score (POMS)*

2.3 PostOperative Morbidity Survey (POMS)

Definition. POMS is defined as positive where the criteria for any one of the 20 items shown in Table A2.2.3 are met (clarification provided for some specific situations).[34,35]

Table A2.2.3 Items of the PostOperative Morbidity Survey (POMS)

Domain	Items
Pulmonary	*New requirement for supplemental oxygen*
	Yes (present). The patient is receiving oxygen therapy for any clinical reason, including patient-controlled analgesia, or other patient safety reasons.
	No (absent). No oxygen therapy, or if the patient has been receiving long-term home oxygen therapy prior to surgery and has recovered back to this original level of oxygen requirement after surgery.
	New requirement for respiratory support
	Yes (present). The patient is receiving either basic or advanced respiratory support that was initiated after surgery (i.e. not present before surgery) as follows.
	Advanced support. Patient is receiving mechanical ventilator support via a translaryngeal tube or a tracheostomy, continuous positive airways pressure via a translaryngeal tube, or extracorporeal respiratory support.
	Basic support. Patient is receiving > 50% oxygen via a face mask (except those receiving short-term increases in FiO_2, e.g. during transfer or physiotherapy, etc.).
	No (absent). The patient is not receiving any form of respiratory support unless it was already present prior to surgery.
Infection	*Currently receiving antibiotics*
	Yes (present). The patient is receiving intravenous antibiotics, even if the indication is only prophylaxis.
Renal	*Oliguria (< 500 ml of urine over 24 h)*
	Yes (present). Urine output < 500 ml during 24 h preceding assessment.
	Increased serum creatinine > 30% from preoperative level
	Yes (present). Serum creatinine increase > 30% from preoperative level documented in the medical notes during the preceding 24 h.
	Urinary catheter in situ
	Yes (present). The patient has either a urethral or suprapubic catheter that was not present before surgery.
	No (absent). The patient has a urostomy or a nephrostomy.
Gastrointestinal	*Unable to tolerate enteral diet (oral or tube feed)*
	Yes (present). The patient is receiving liquid feed via any form of enteral feeding tube (e.g. nasojejunostomy tube) but not tolerating the full prescribed rate (i.e. large volume of aspirates) and would therefore need to remain in hospital.
	No (absent). The patient is receiving liquid feed via any form of enteral feeding tube (e.g. nasojejunostomy tube) at the full prescribed rate, and will leave hospital on this diet.
	Nausea, vomiting or abdominal distension
	Yes (present). The patient is unable to return to the previous normal diet, e.g. because of abdominal distension, paralytic ileus, nausea or vomiting, including patients who require anti-emetics and do not eat much or any food.
	No (absent). The patient can eat most but not all of a meal because their appetite has not fully returned.
Cardiovascular	*New myocardial infarction*
	Yes (present). The patient has been diagnosed as having had a myocardial infarction at any time following surgery.
	Ischaemia or hypotension (requiring drug therapy or fluid therapy of more than 200 ml h^{-1})
	Atrial or ventricular arrhythmias
	Cardiogenic pulmonary oedema/new anticoagulation
	Yes (present). The patient is receiving treatment doses of heparin for deep vein thrombosis or pulmonary embolism.
	No (absent). The patient is being re-established on warfarin therapy that been present prior to surgery, or if the patient is being given a prophylactic dose of low-molecular weight heparin as a normal standard of care but one which does not delay discharge or indicate some significant morbidity.
Neurological	*New neurological deficit*
	Confusion or delirium
	Yes (present). The patient's family or nursing staff report that behaviour is not normal, i.e. new confusion or delirium as opposed to pre-existing deficit.
	No (absent). If the patient had pre-existing confusion or delirium prior to surgery.
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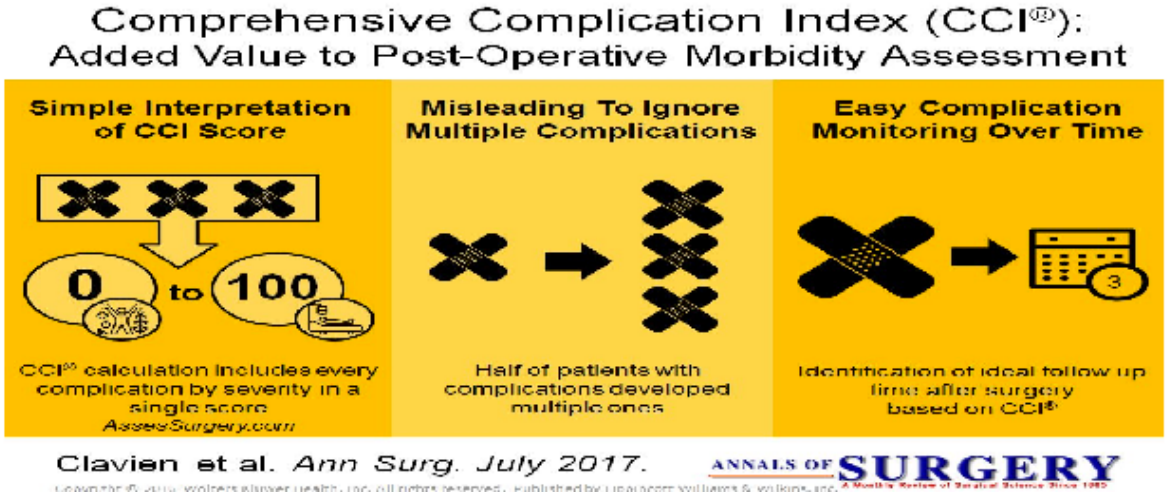
***Table 4**: Clavien-Dindo Scale of Postoperative Complications: Classification*

Grades	Definitions of grades	Modes of therapy
Grade I	Any deviation from the normal postoperative course.	No pharmacological or surgical treatment, endoscopic or radiological interventions were required. Acceptable therapeutic regimens are drugs such as anti-emetics, antipyretics, analgesics, diuretics, and electrolytes and physiotherapy. Wound infections or small abscess requiring incision at bedside is within this category.
Grade II	Normal course altered	Pharmacological management other than in Grade 1. Blood transfusions and total parenteral nutrition are also included.
Grade III	Complications that require intervention of various degrees	Sub-classified into: Grade IIIa – complications that require an intervention performed under local anaesthesia. Grade IIIb – interventions that require general or epidural anaesthesia.
Grade IV	Complications threatening life of patients (including CNS complications), requiring ITU support	Further sub-classified into: Grade IV a – single organ dysfunction (including dialysis). Grade IV b – multi-organ dysfunction.
Grade V	Death of a patient	

***Figure 1:** Comprehensive Complication Index*



References

Clavien PA, Vetter D, Staiger RD, et al. The Comprehensive Complication Index (CCI(R)): Added Value and Clinical Perspectives 3 Years "Down the Line". Ann Surg 2017; 265(6):1045-1050.

Jammer I. standards for defintions and use of outcome measures for clinical effectiveness research in perioperative medicine: EPCO Definitions. Eur J Anaesthesiol 2015;32:88-105