Implementing quality indicators for cytoreductive surgery in ovarian cancer: Experience from a tertiary referral center in Eastern India

Asima Mukhopadhyay, Nazma Siddiquee, Basumita Chakraborti, Anik Ghosh, Jaydip Bhaumik
Department of Gynaecological Oncology, Tata Medical Center, Kolkata, India

Correspondence: asima7@yahoo.co.in

Background and objectives:

- **Debate continues whether neo-adjuvant chemotherapy and interval surgery (NACT and IDS) or primary debulking surgery (PDS) should be offered in advanced epithelial ovarian cancer (EOC) as frontline therapy. Since 2015, there has been a paradigm shift at Tata Medical Center; increasing number of patients are being offered PDS.**
- **ESGO in October 2015 has published a document indicating 10 quality indicators for cytoreductive surgery in advanced ovarian cancer.**

Aim: We introduced a quality improvement programme in 2015 and compared our performance against all 10 quality indicators.

Methods:

- **Retrospective audit ; study period January 2015 -December 2015**
- **Data was collected from hospital electronic medical records system**
- **Morbidity data was prospectively collected in the Redcap database**

Retrospective and prospective data collection

Multidisciplinary team input and review of protocols

- In depth reflective analysis of each operative procedure
- Complications, morbidity and mortality and risk management

- Educational presentations on literature review, complications and review of surgical anatomy
- Ideas for future studies and projects, introduction of organ based audits
- National and international presentations and external peer review

QI 1. Complete resection rates

Indicator	TMC	Target
Complete resection rate	> 90%	> 65%
Proportion of patients who are operated upfront	69%	> 80%

QI 2. Number of cytoreductive surgeries

Indicator	Optimal target	Intermediate target	Minimum target	TMC data
No. of CRS/year/ centre	>/= 100	>/= 50	>/= 20	53 (2014) 102 (2015)
No. of CRS /surgeon /year	≥ 95% of surgeries are performed or supervised by surgeons operating at least 10 patients/year			YES

QI 3. Surgery performed by a gynaecologic oncologist /trained surgeon specifically dedicated to gynaecological cancers

Target >/= 90% TMC = 100%

QI 4. Centre participating in clinical trials in gynaecological oncology

Target not applicable

TMC= RiGoROCs study (RCT on peri-operative fluid therapy)
HEPTROC (health economics and QOL)

QI 5. Treatment planned and reviewed at a multidisciplinary team meeting Target >/= 95%

TMC	Pre op MDT	Post op MDT
March 2015*	7/9	9/9 (100%)

* 2 cases -short notice but discussed within MDT team

QI 6. Required pre-operative work up

Target: >/= 95%

- Rule out unresectable parenchymal metastases by imaging: TMC 100%
- Rule out secondary malignancy (CA125/CEA) /other malignancies by suitable methods (tumour marker/ biopsy) : TMC 100%
- 100% patients underwent pre-op meeting check up and Pro-forma for check list filled in

QI 9. Minimum required elements in pathology reports

All the required elements listed in International collaboration on cancer reporting histopathology reporting guide.

Target >/=90% TMC= 95%

QI 7. Pre-, intra & post operative management:

1. Intermediate care facility and access to ICU – 100%

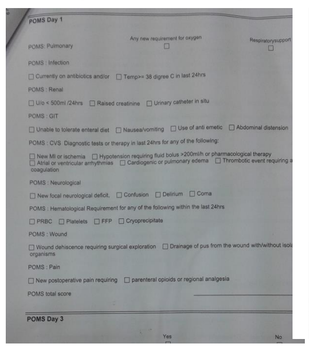
2. **Active peri-operative management programme**
Current/ studies

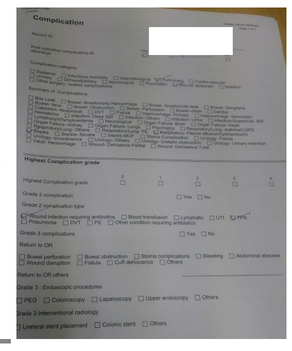
- Fluid management –goal directed vs. restrictive ; RiGOROCS trial
- Morbidity indicators
- Antibiotic strategy
- Pulmonary morbidity after diaphragmatic surgery
- Splenectomy prophylaxis
- Haemoglobin optimisation/iron deficit correction : IV iron
- Pain management
- Health economics and QOL: HEPTROC study

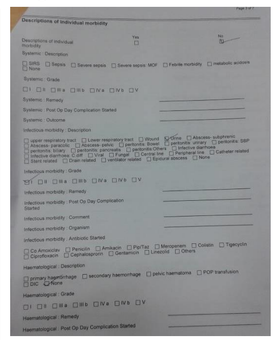
QI 10. Existence of a structured prospective reporting of post-operative complications

Optimal target – 100% prospective recording
Minimum required target: selected cases are discussed at morbidity and mortality conferences

TMC: Retrospective and prospective recording in the Redcap database: At discharge, 30 day post op, follow up visits -100%. Weekly risk management and morbidity meetings- 97%







- Grade 3-5 complications : 35% in PDS versus 27% in IDS. Commonest morbidity- infective, wound and pulmonary.
- All complications showed a downwards trend in June –Dec 2015 compared to Jan-June 2015.

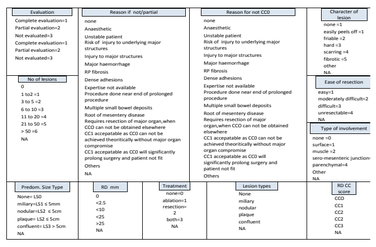
QI 8. Minimum required elements in operative records

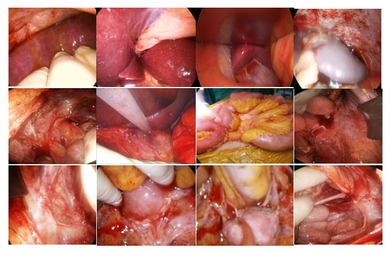
Structured Operative record should include- (90%)

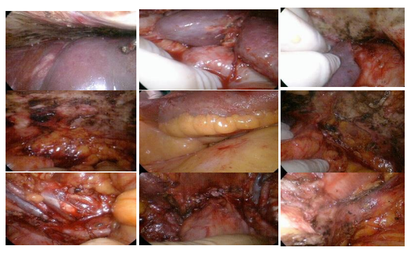
1. Size and location of disease at the beginning of operation
2. All the areas of the abdominal cavity must be recorded (ovary, tube, uterus, pelvic peritoneum, paracolic gutters, anterior peritoneum, mesentery, peritoneal surface of bowel and colon, liver, spleen, greater and lesser omentum, porta hepatis, stomach, Morison pouch, lesser sac, under surface of both hemi diaphragms, pelvic and para aortic nodes and if applicable pleural cavity)
3. Size and residual disease at the end of the operation
4. Reasons for not achieving complete cytoreduction

TMC data

Since 2015, we have introduced a detailed prospective recording with laparoscopic guidance and photographic documentation pre and post procedure and PCI, SCS scoring, CC score



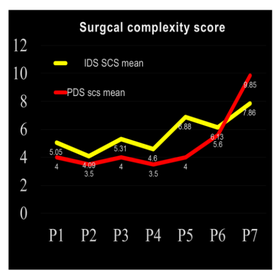




Variable	PDS (n=51)	PDS Stage III/IV only (n=31)	IDS (n=30)	IDS Stage III/IV only (n=27)
PCI score				
≤15	33 (64.7%)	13 (42%)	23 (76.7%)	20 (74%)
>15	18 (35.3%)	18 (58%)	7 (23.3%)	7 (26%)
SCS Score				
<3	11 (21.5%)	2(6.5%)	1 (3.3%)	0
4-7	19 (37.3%)	9 (29%)	13 (43.3%)	12(44.4%)
>8	21 (41.2%)	20 (64.5%)	16 (53.3%)	15(55.6%)
CC Score				
CC 0/CC1 (<2.5mm)	49 (96.1%)	29 (93.5%)	29 (96.7%)	26 (96.3%)
CC 2	1 (1.96%)	1 (3.2%)	1 (3.33%)	1 (3.7%)
CC3	1 (1.96%)	1 (3.2%)	0	0

Procedure Jan – June 2015	IDS N=15	PDS N=20	UK(N=22)
TAH	13 (86 %)	19(95%)	
BSO	15(100%)	20(100%)	
PLND	15(100%)	20(100%)	
PALND	15 (100%)	20(100%)	18 (82%)
Omentectomy	15(100%)	20(100%)	
Diaphragmatic	7 (46%)	14 (70%)	17 (77%)
Pelvic	11(73%)	17(85%)	
Abdomen	6(40%)	12(60%)	17(77%)
Rectosigmoid anastomosis	4(26%)	8(40%)	14 (63%)
Large Bowel resection	2(13%)	7(35%)	
Small Bowel resection	1(6%)	5(25%)	
Liver resection	1(6%)	0(0%)	4 (18%)
Splenectomy	1(6%)	7(35%)	9 (41%)
Distal pancreatectomy	0(0%)	3(15%)	2 (9%)
Cholecystectomy	3(20%)	8(40%)	5 (28%)
Total colectomy	0(0%)	3(15%)	5 (28%)
Resection of tumor from stomach	0(0%)	2(10%)	3(14%)
Resection of lesser sac tumor	0(0%)	8(40%)	18(82%)
Porta hepatis	0(0%)	5(25%)	5(28%)

Increasing Surgical complexity from
P1 (Jan-June 2012)
to
P7 (Jan –June 2015)



Discussion:

Implementation of a quality improvement programme is the key to overcome the barriers of implementing a cytoreductive program in advanced ovarian cancer. However, standards similar to developed countries can be achieved through a dedicated team effort.

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