

Gynae-oncology: The Anaesthetist's Perspective


OASIS 2024

Dr Amelia Davies

Women's Anaesthesia Perioperative Medicine Fellow

Arriving in New Zealand as a UK Trainee



- 
- A microscopic image showing several large, irregularly shaped cells with a textured, almost crystalline appearance. The cells are stained in shades of blue and cyan, set against a dark background. Some cells are more prominent than others, with one large cell in the upper right and another in the lower center. The overall image has a scientific, clinical feel.
- The Perioperative Medicine Fellowship
 - Principles of Onco-anaesthesia
 - What ADHB offers to women with Gynae Cancers
 - The Future

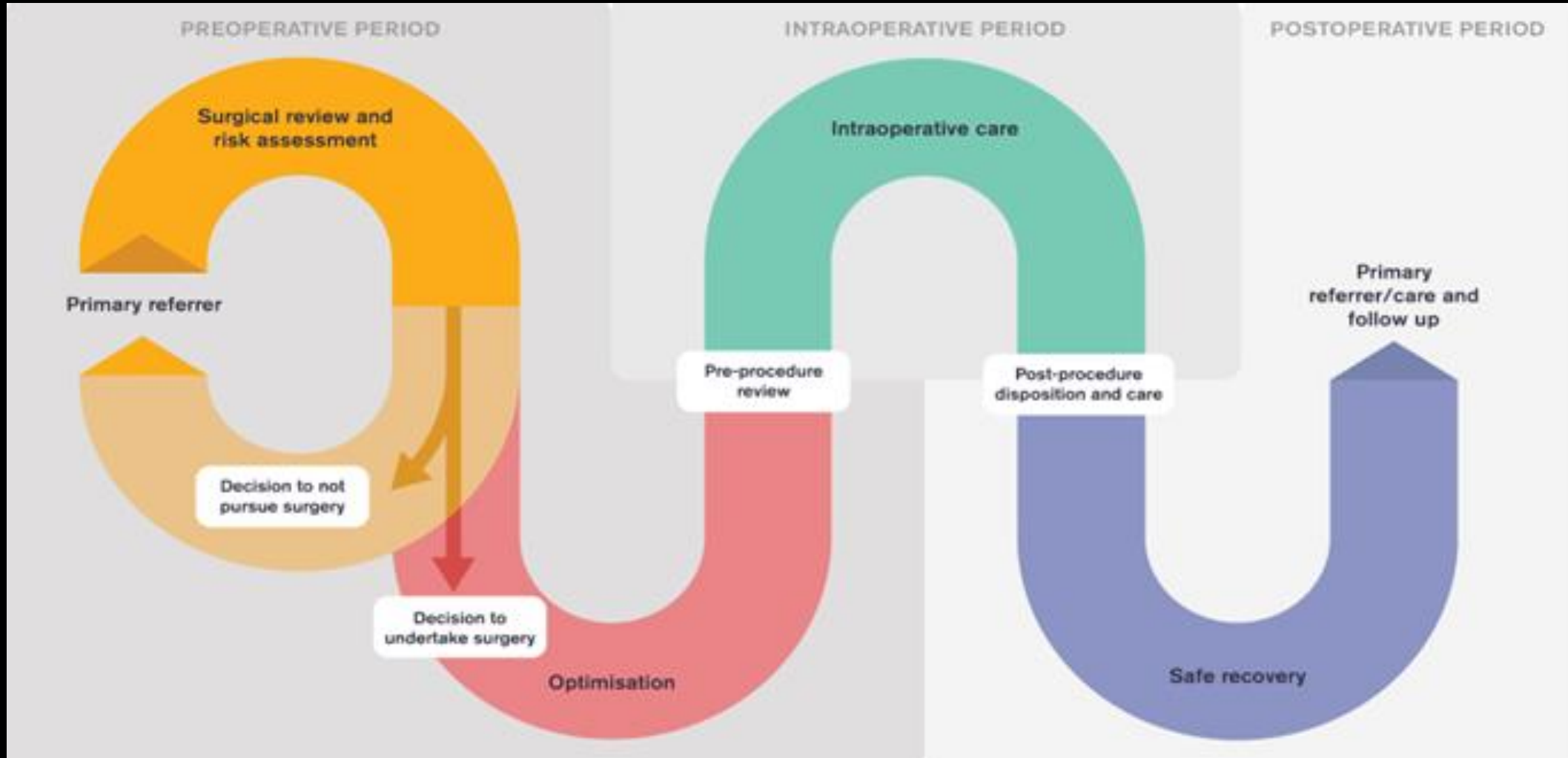
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Women's Anaesthesia Perioperative Medicine Fellowship



Peri-operative Medicine Role



Additional Duties

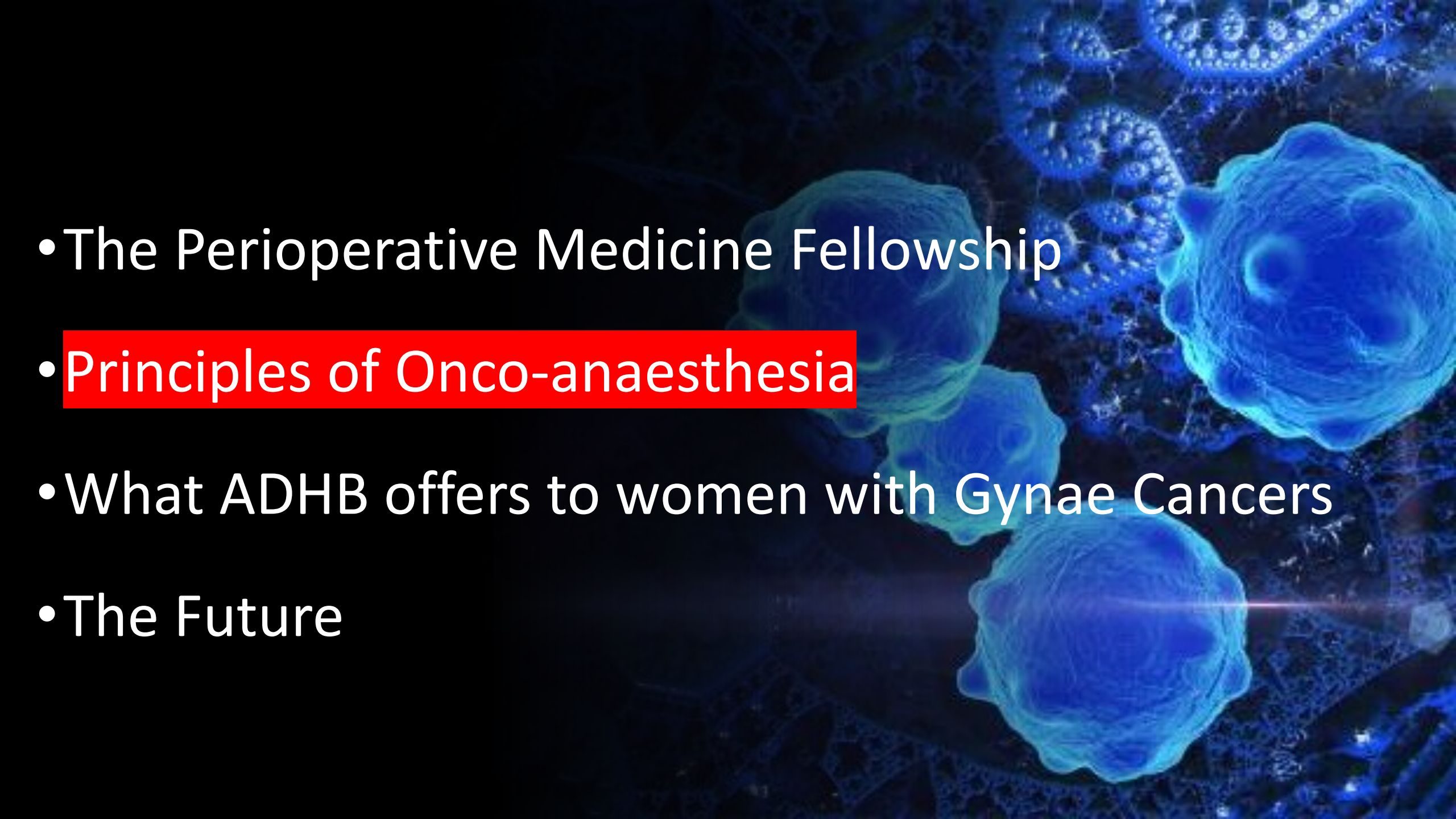
- Acute Obstetrics
 - Elective LSCS
 - Obstetric Clinics
 - Theatre Coordinator
 - Oncall
-



Extra Opportunities

- Teaching
 - Supervising
 - QI Projects
 - Protocol review
-



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TUMOUR

PROGRESSION OF CANCER IN THE PERIOPERATIVE PERIOD

SURGERY
AND
ANAESTHESIA

HYPOXIA

GROWTH
FACTORS

INFLAMMATION

ANGIOGENESIS

IMMUNO-
SUPPRESSION

RESIDUAL
TUMOUR

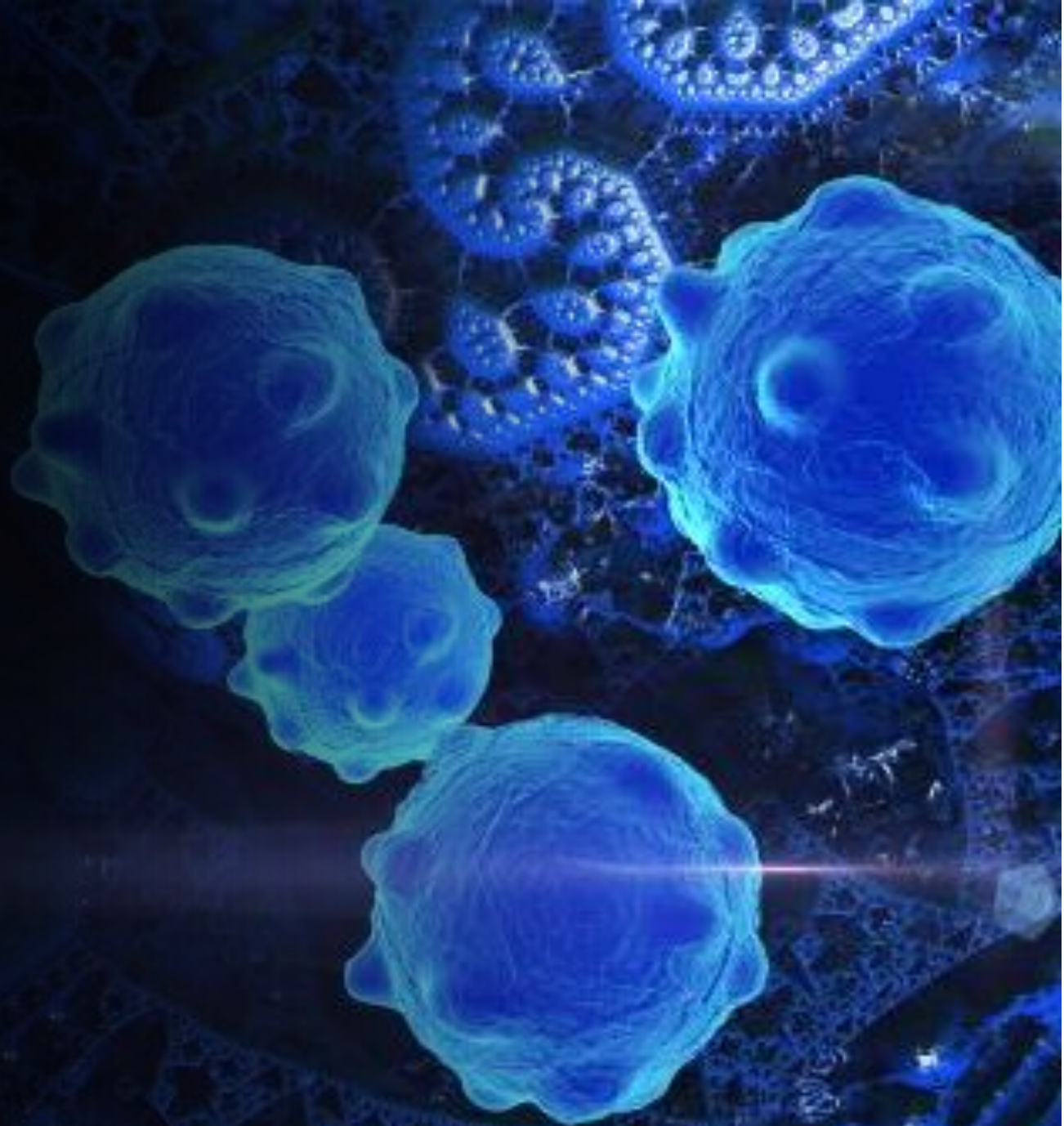
LOCAL
RECURRENCE



Table 1 Summary of perioperative interventions and current available evidence: positive (+), neutral (0), negative (-) results or awaiting results of ongoing trial (?) with respect to tumour recurrence/survival rates. COX-2, cyclooxygenase-2; TIVA, total intravenous anaesthesia.

	<i>In vitro</i> (laboratory)	<i>In vivo</i> (animal)	Observational	RCT	Evidence
Regional anaesthesia			+/0	0	Neutral
Propofol TIVA/volatile anaesthesia	+/0	+	+/0	?	Vapor C awaited
Opioids	+/0	+/0	+/0	?	Further RCT needed
Amide local anaesthetic infusion	+	+	+/0	+/0/?	Encouraging early RCT data
NSAIDs/COX-2 inhibitors, beta blockers	+	+	+/0	0	Postoperatively alone – nil benefit, Pre/Intra/Post Combinations to be investigated
Dexamethasone	-		+/0	No data	RCT needed
Dexmedetomidine	-	-	0	+/0	Need adequately powered RCT
Ketamine	+/0	0	+	No data	RCT needed

TIVA vs Volatiles



Propofol TIVA

- **In vitro:**
 - Inhibits tumour cell proliferation & metastasis
 - Promotes cell apoptosis
 - Increases sensitivity to chemotherapy drugs
- **In vivo:**
 - inhibits tumour growth & metastasis



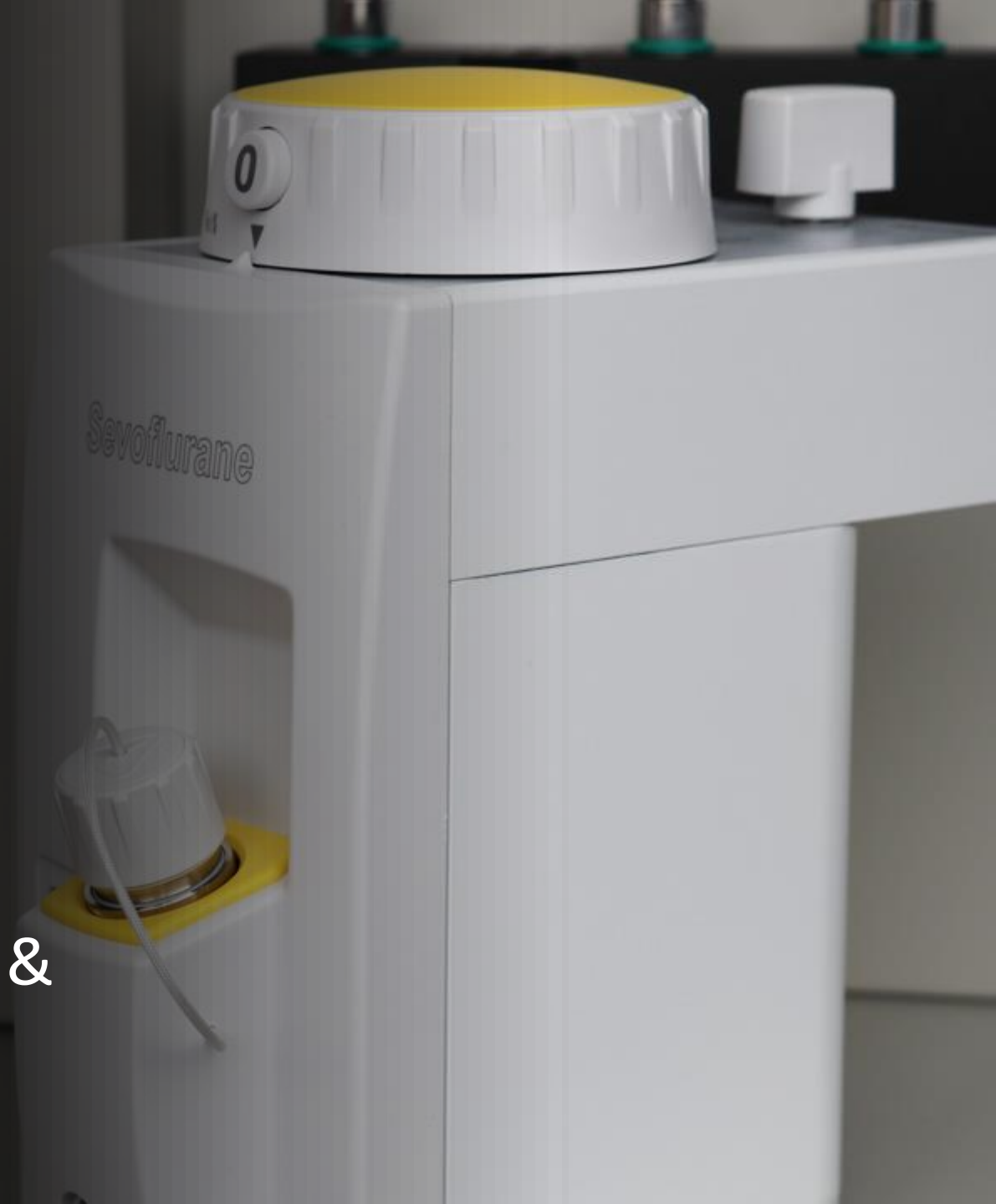
Volatile Agents

In vitro:

- Immune suppression
- Increase IL-GF, HIFs, VEGFs

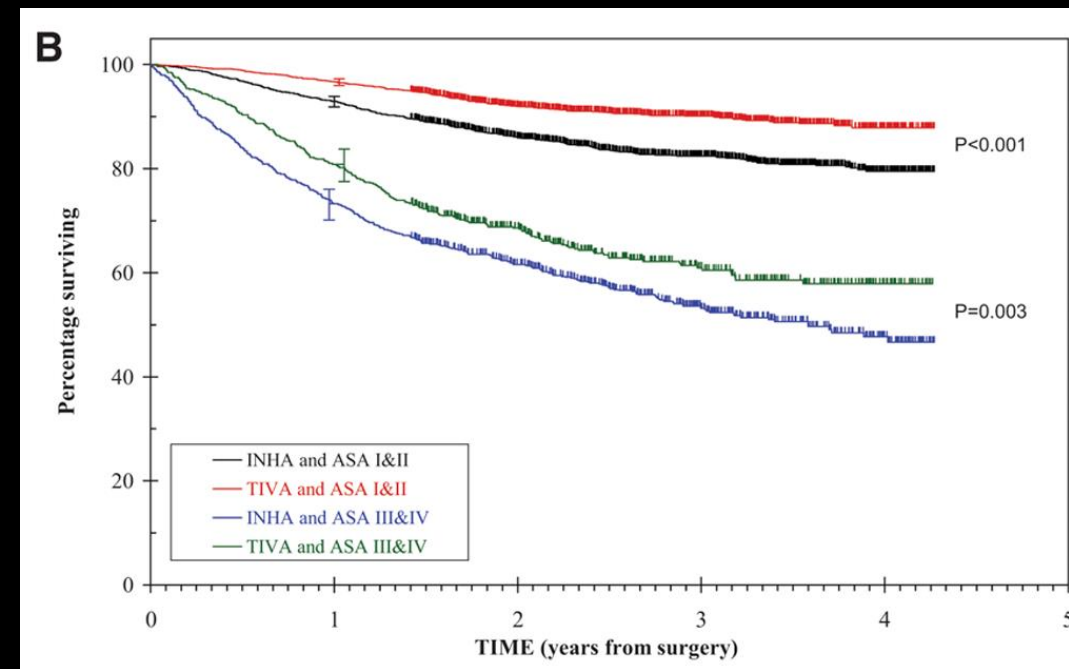
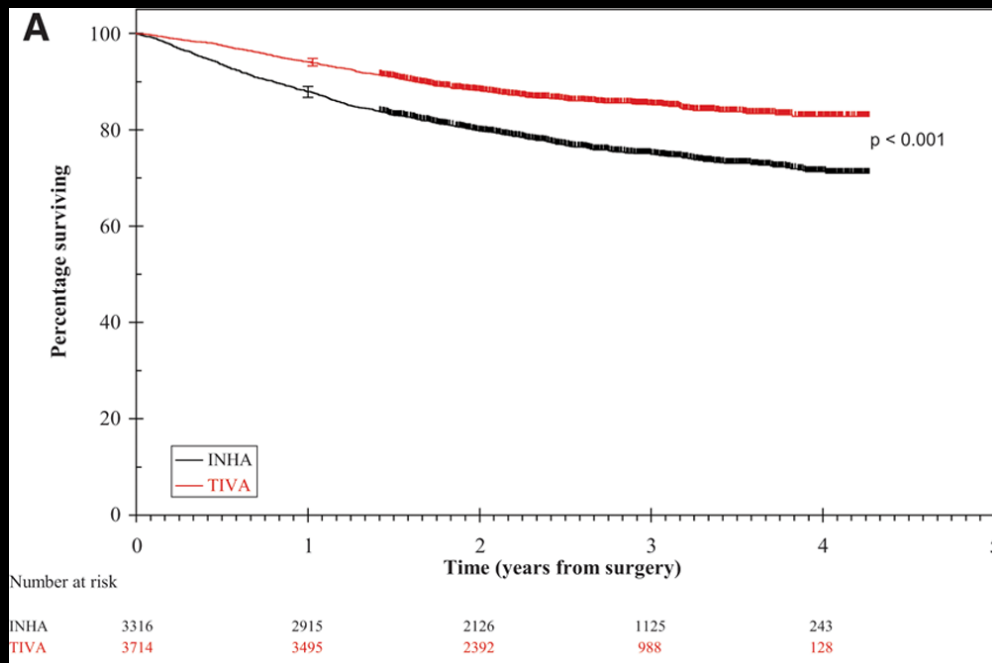
In vivo:

- Increase proliferation, migration & angiogenesis of cancer cells
- Increased chemoresistance



Long-term survival in TIVA vs volatile for cancer surgery

- Wigmore et al (2016): Retrospective analysis
 - Mortality was approximately 50% greater with volatile than with IV anaesthesia, with an adjusted hazard ratio of 1.46 (1.29 to 1.66)



Epub 2019 Mar 4.

Anesthetic technique and cancer outcomes: a meta-analysis of total intravenous versus volatile anesthesia

Andrea Yap^{1 2}, Maria A Lopez-Olivo³, Julia Dubowitz^{4 5}, Jonathan Hiller^{4 5 6},
Bernhard Riedel^{4 5 6}; Global Onco-Anesthesia Research Collaboration Group

- 10 studies
 - 9 studies retrospective observational studies
 - 1 RCT – small + underpowered

Overall, TIVA associated with increased recurrence-free survival & overall survival

Welcome to the Vapor-C Research website. Evidence in Onco-Anaesthesia.

Volatile Anaesthesia and Perioperative Outcomes Related to Cancer: The VAPOR-C Trial.

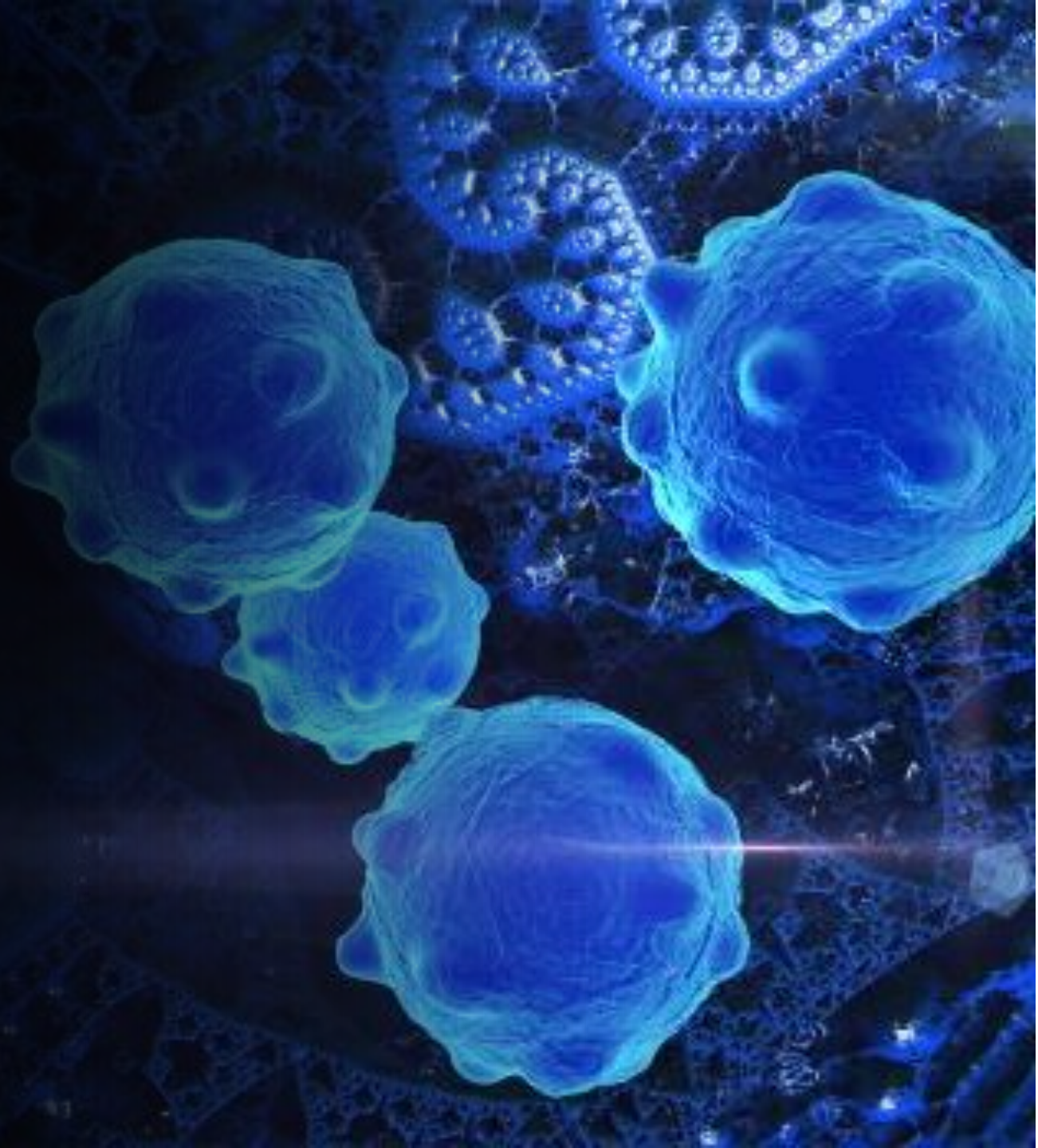
VAPOR-C 
Evidence in Onco-anaesthesia



Peter Mac
Peter MacCallum Cancer Centre
Victoria Australia

This trial is funded by the National Health and Medical Research Council (NHMRC) and supported by the Victorian Comprehensive Cancer Centre (VCCC), University of Melbourne and the ANZCA Clinical Trials Network.

Lidocaine Infusions



Multi-modal Analgesia

- Opioid Sparing
 - PONV
 - Bowel function
 - Tolerance/Dependence
- Early mobilization
 - VTE risk
 - PT engagement
- Respiratory Function



Lidocaine

- Analgesic
- Anti-hyperalgesic
- Anti-inflammatory



Perioperative Intravenous Lidocaine

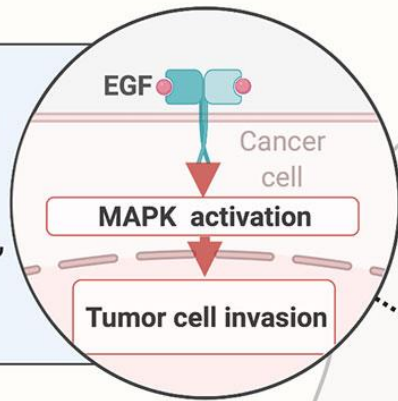
Potential mechanisms of anti-neoplastic effects

During surgical excision of a bowel carcinoma (*), circulating tumour cells are released and deposit in the liver, lidocaine may act via any or all of 1 - 4 during this period.

1

Effects on Cancer Cells

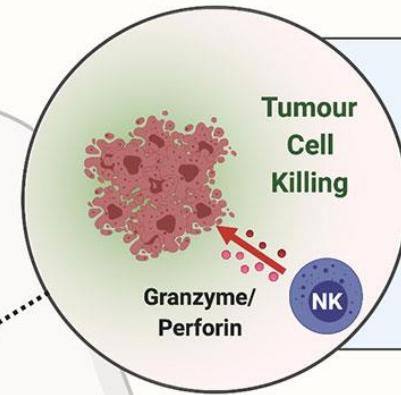
Many candidate mechanisms e.g. NF-KB, EGFR, Src etc.



2

Effects on Immune Cells

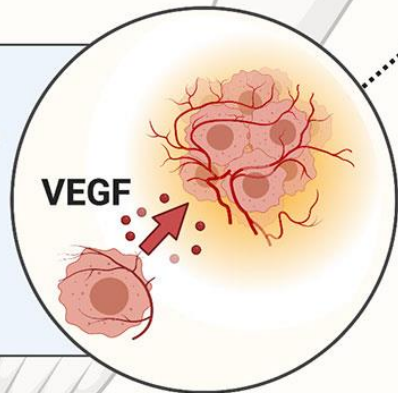
Enhanced NK cytotoxicity, Th1 predominance preserved etc.



3

Effects on Angiogenesis

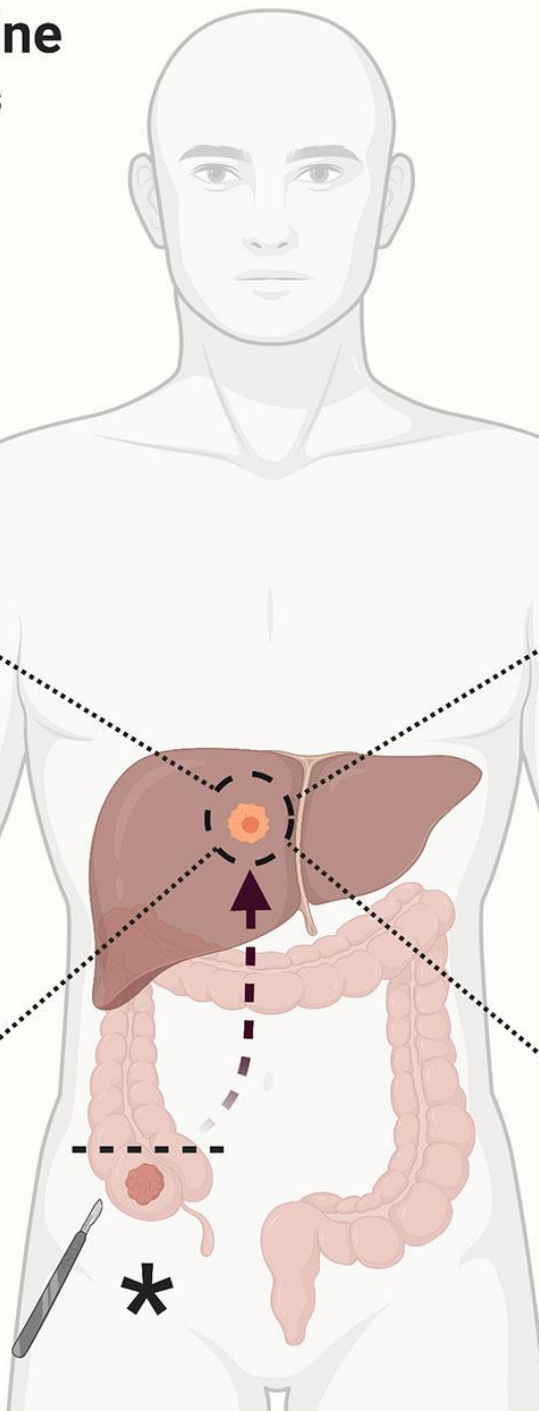
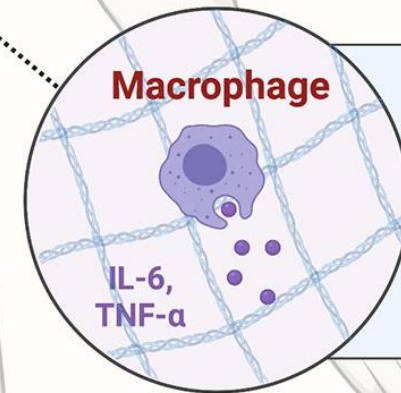
Inhibition of HIF and VEGF pathways



4

Effects on Inflammation








Inhibition of inflammatory cytokine release e.g. IL-6



ORIGINAL REPORTS | April 06, 2023



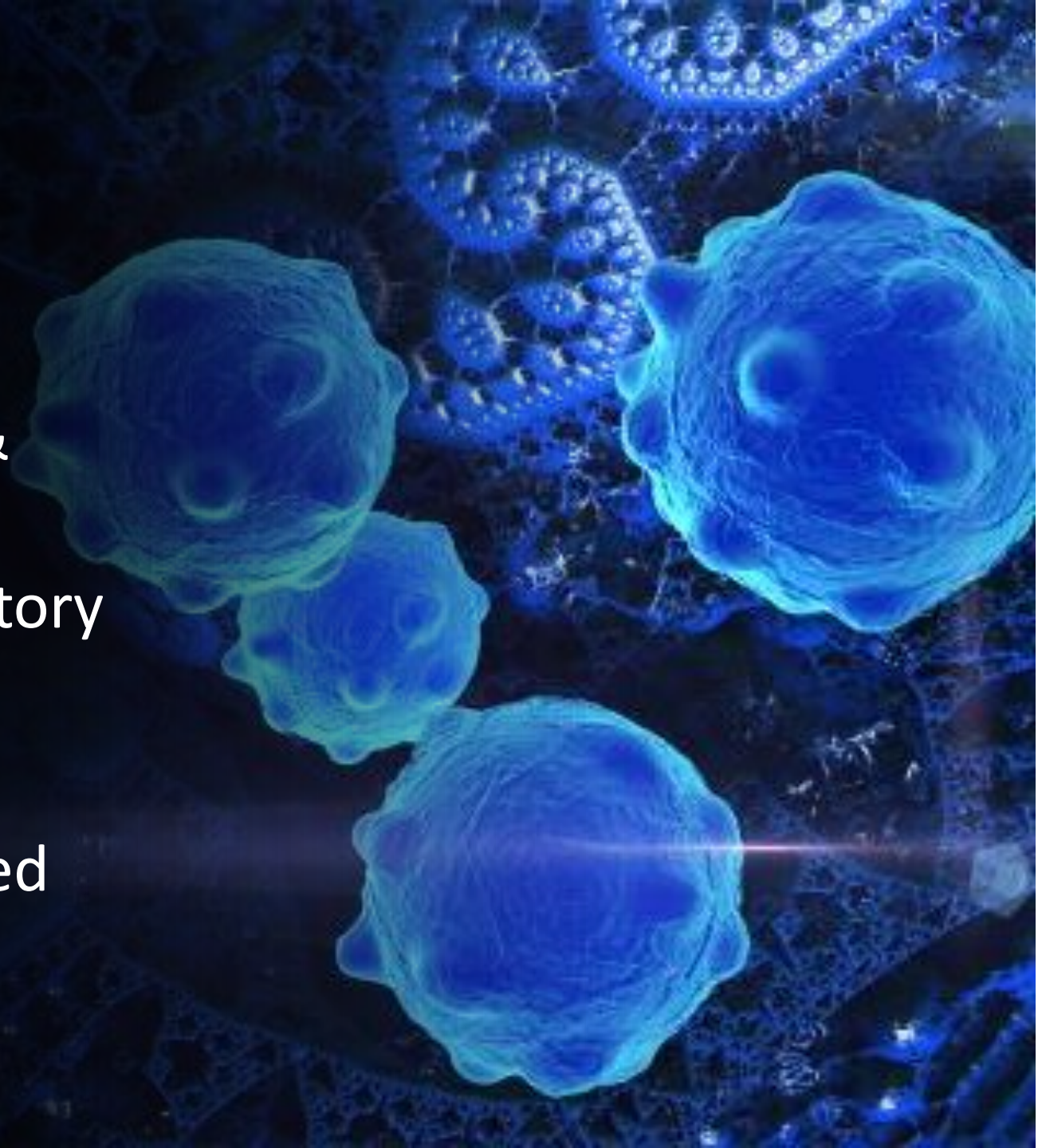
Effect of Peritumoral Infiltration of Local Anesthetic Before Surgery on Survival in Early Breast Cancer


Authors: Rajendra A. Badwe, MS  , Vani Parmar, MS, DNB , Nita Nair, MS, DNB, MCh, MRCS , Shalaka Joshi, MS , Rohini Hawaldar, BSc, DCM , Suraj Pawar, MS, FICS, FAIS, FMAS, FIAGES, Geeta Kadayaprath, MS, FRCS, ... [SHOW ALL](#) ..., and Sudeep Gupta, MBBS, MD, DM  | [AUTHORS INFO & AFFILIATIONS](#)

Publication: Journal of Clinical Oncology • Volume 41, Number 18 • <https://doi.org/10.1200/JCO.22.01966>

Lidocaine & Cancer

- Inhibits proliferation, invasion & migration of Ca cells
- Anti-neoplastic & anti-inflammatory effects
- Need more evidence of improved survival after cancer surgery



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Gynae Onco-anaesthesia at ADHB



67F – Penny

Lives on family dairy farm

Waikato



HPC:

- Weight loss
- Ascities

PMHx:

- T2DM
- HTN
- Smoker (20 pack year)
- Hysterectomy 2001
- Lap Chole 2018



DHx:

- Empagliflozen
- Dulagltide
- Metformin
- Candesartan

SHx:

- Lives with husband
- Helps on family farm

Pre-op



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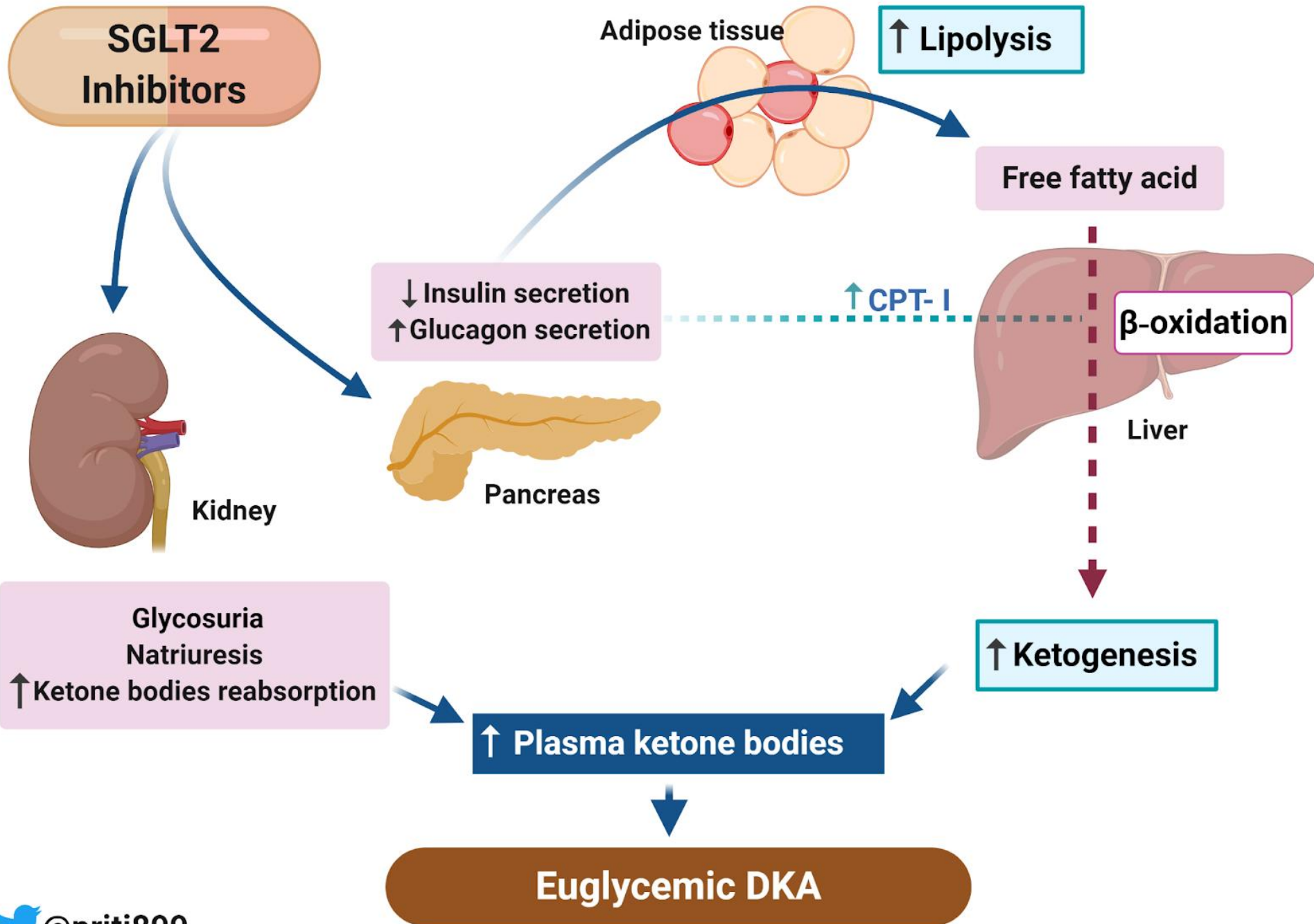


DHx:

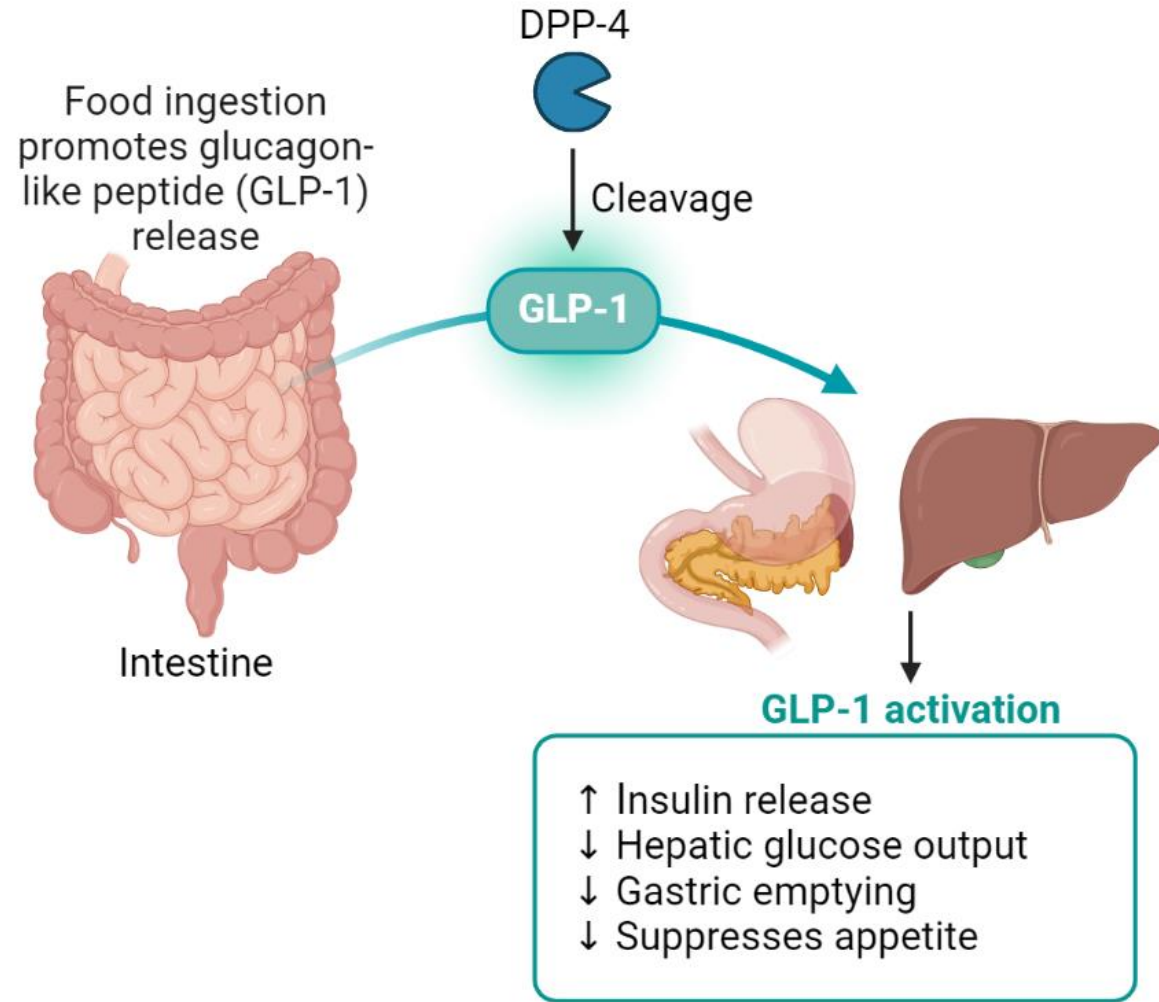
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GLP-1 agonists



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Pre-op



Pre-op



Pre-op



Intra-op

- Pre- induction
 - IV access
 - Thoracic Epidural
- Induction
 - Propofol TIVA
 - RSI




- Post- induction
 - IABP
 - ?CVC
- Maintenance
 - Multi-M Analgesia
 - TIVA
 - Albumin
 - Electrolytes
- NMB Reversal

Post-op

- Pain management
- Physiotherapy
- Fe infusion/ Transfusion
- Nurse Specialists



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MDT PERI-OP Care

- Physio
- Dietician
- Pharmacist
- HDU





Thank you

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