Treatment overview of colon cancers.

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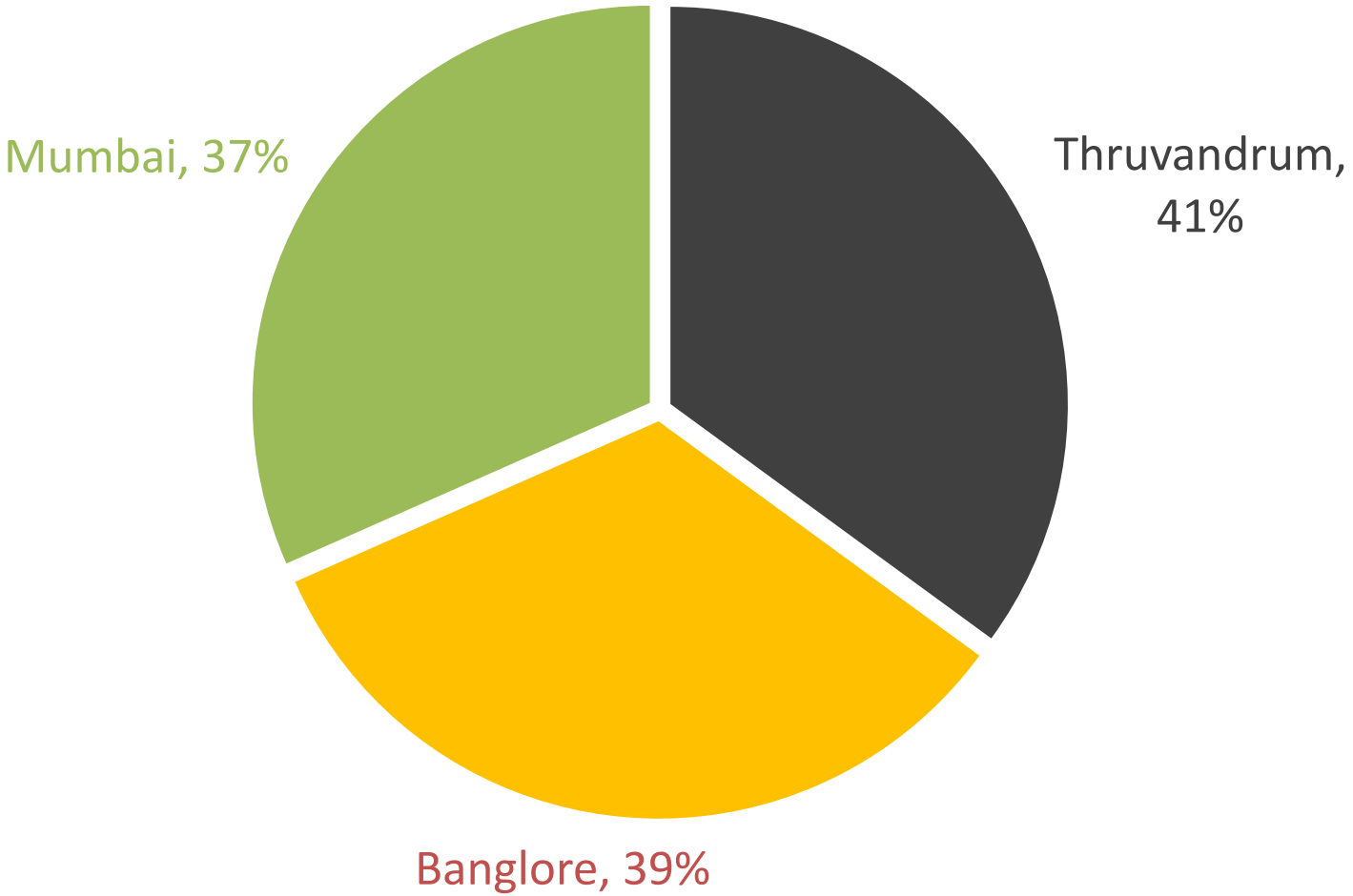
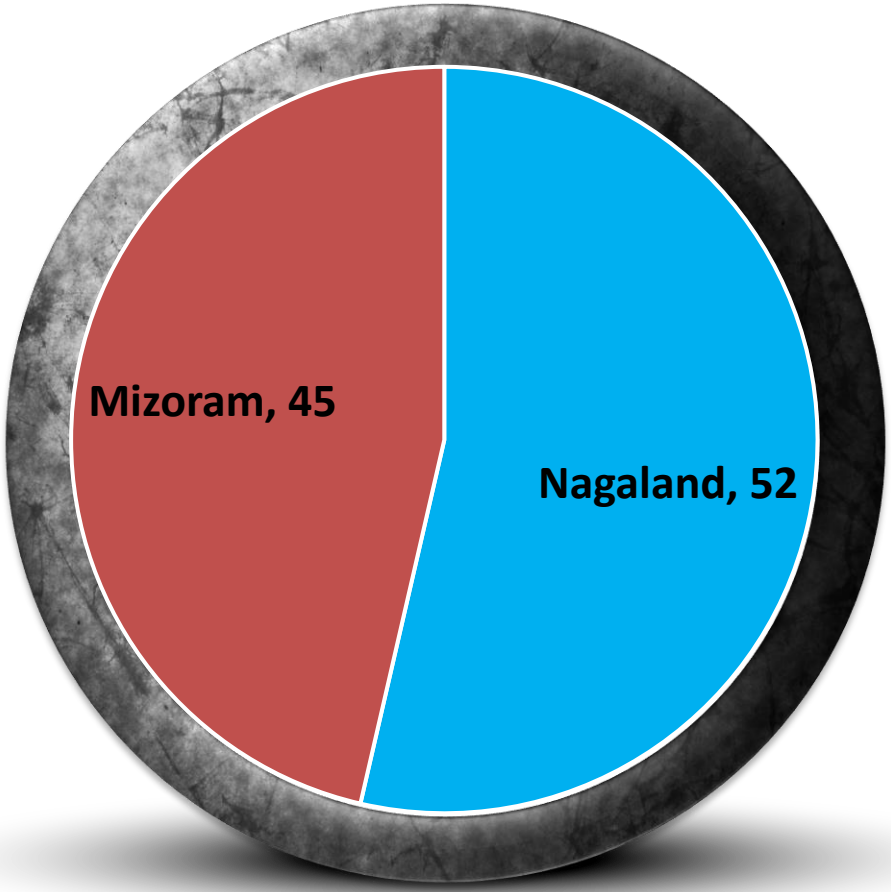
Indian scenario of colon cancer

8%	Of all cancer related death
4.4 per M	Annual incidence rate in men
3.9 per M	Annual incidence rate in females
8th	Most common cancer in male
9th	Most common cancer in female

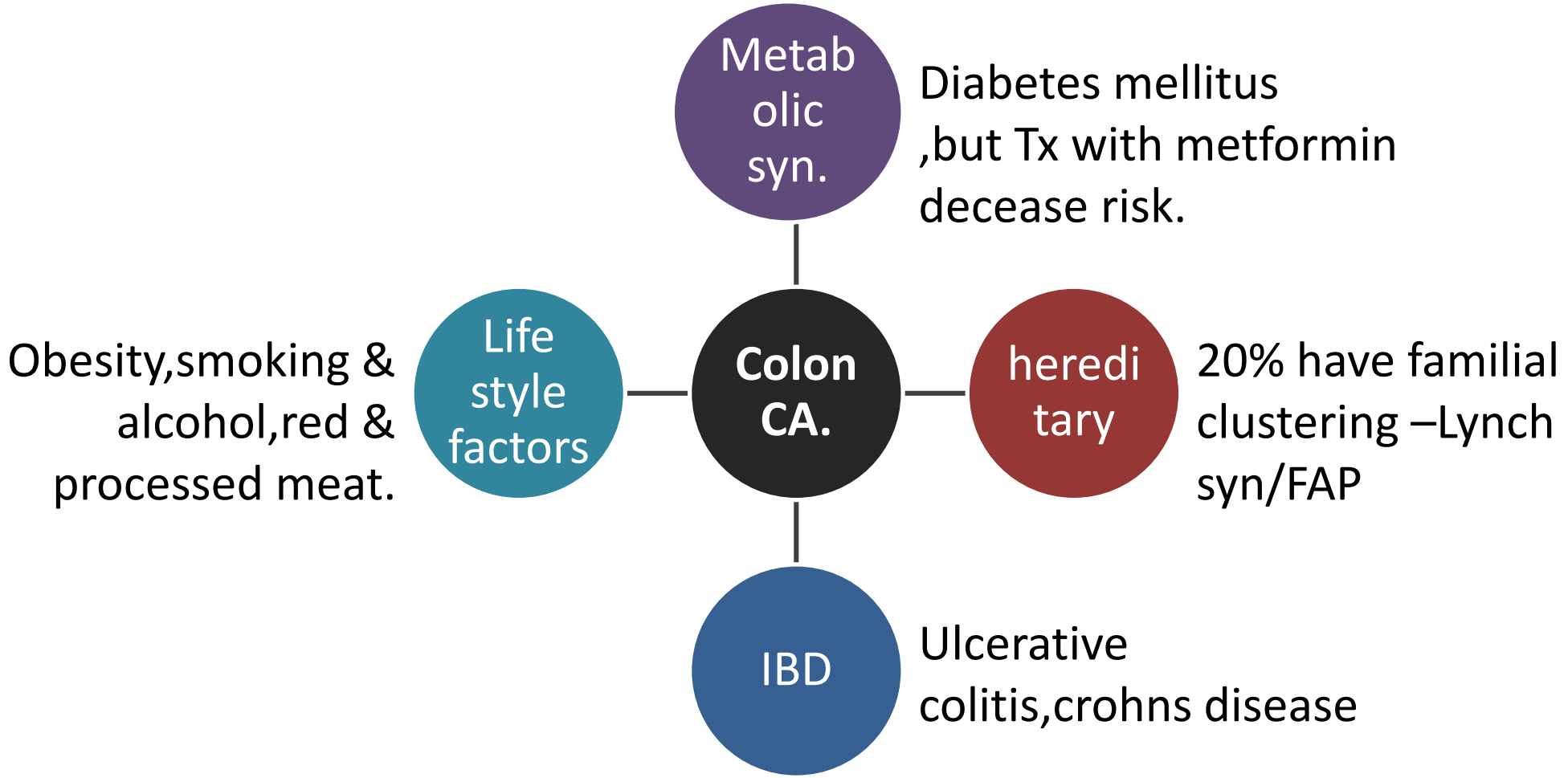
Annual incidence in males



Annual incidence in females

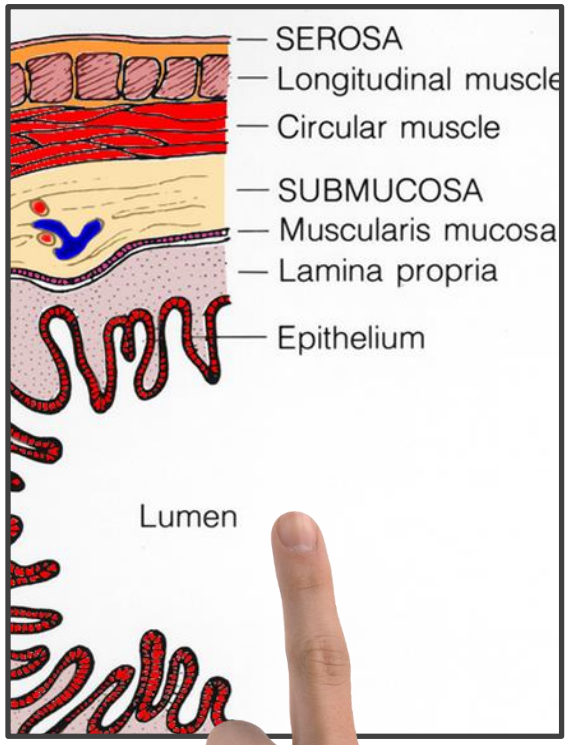


4 main risk factors for colon cancer are.

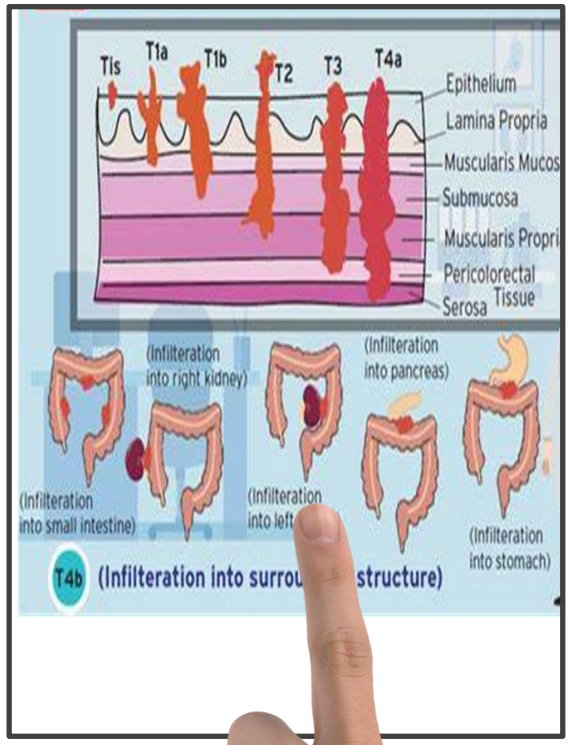


pT staging of colon cancer-8 th AJCC classification

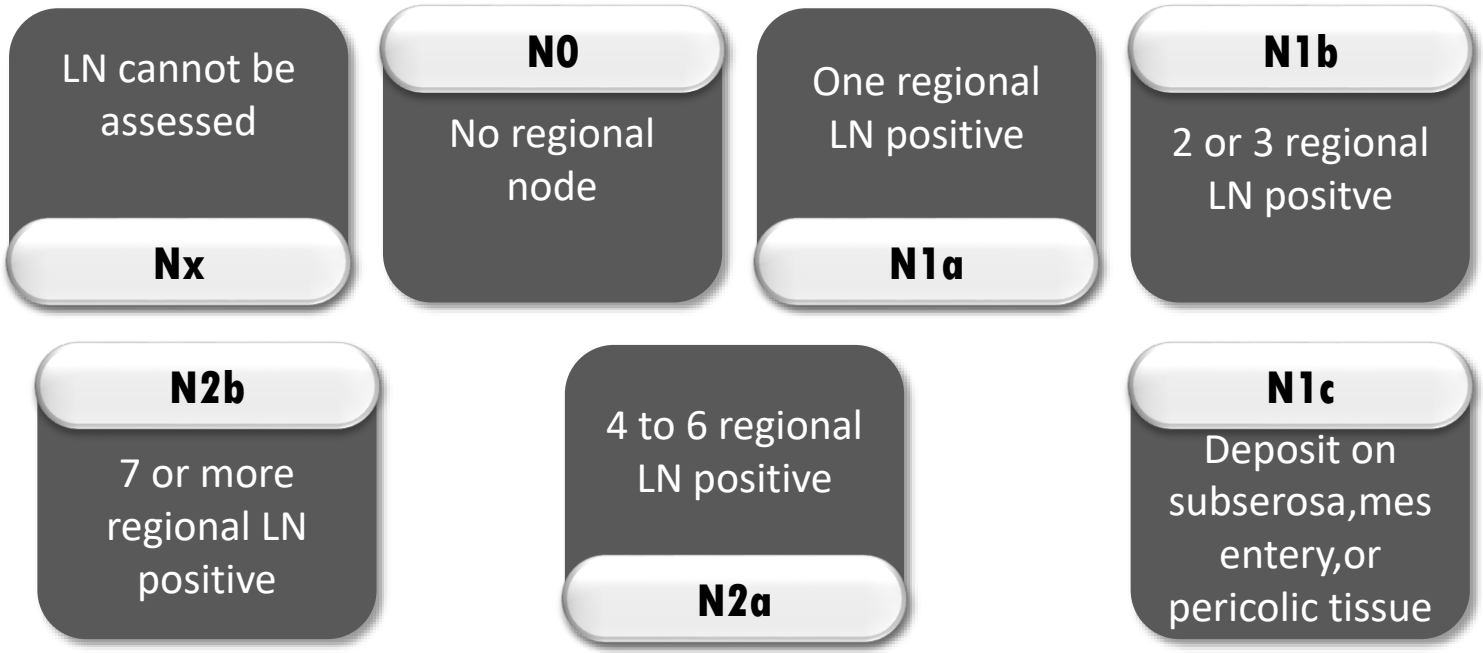
Anatomy



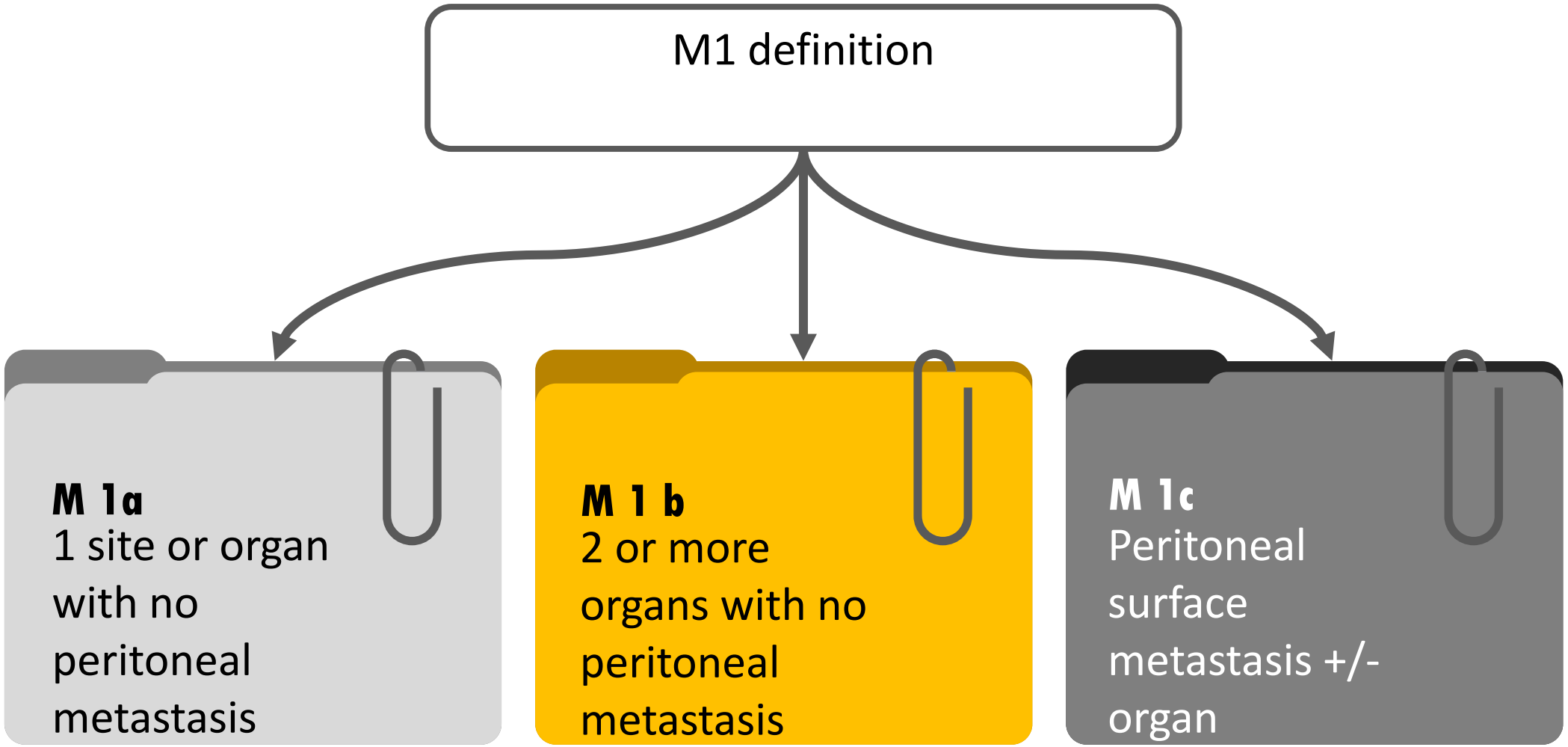
T staging



pN staging of colon cancer -8 th AJCC classification



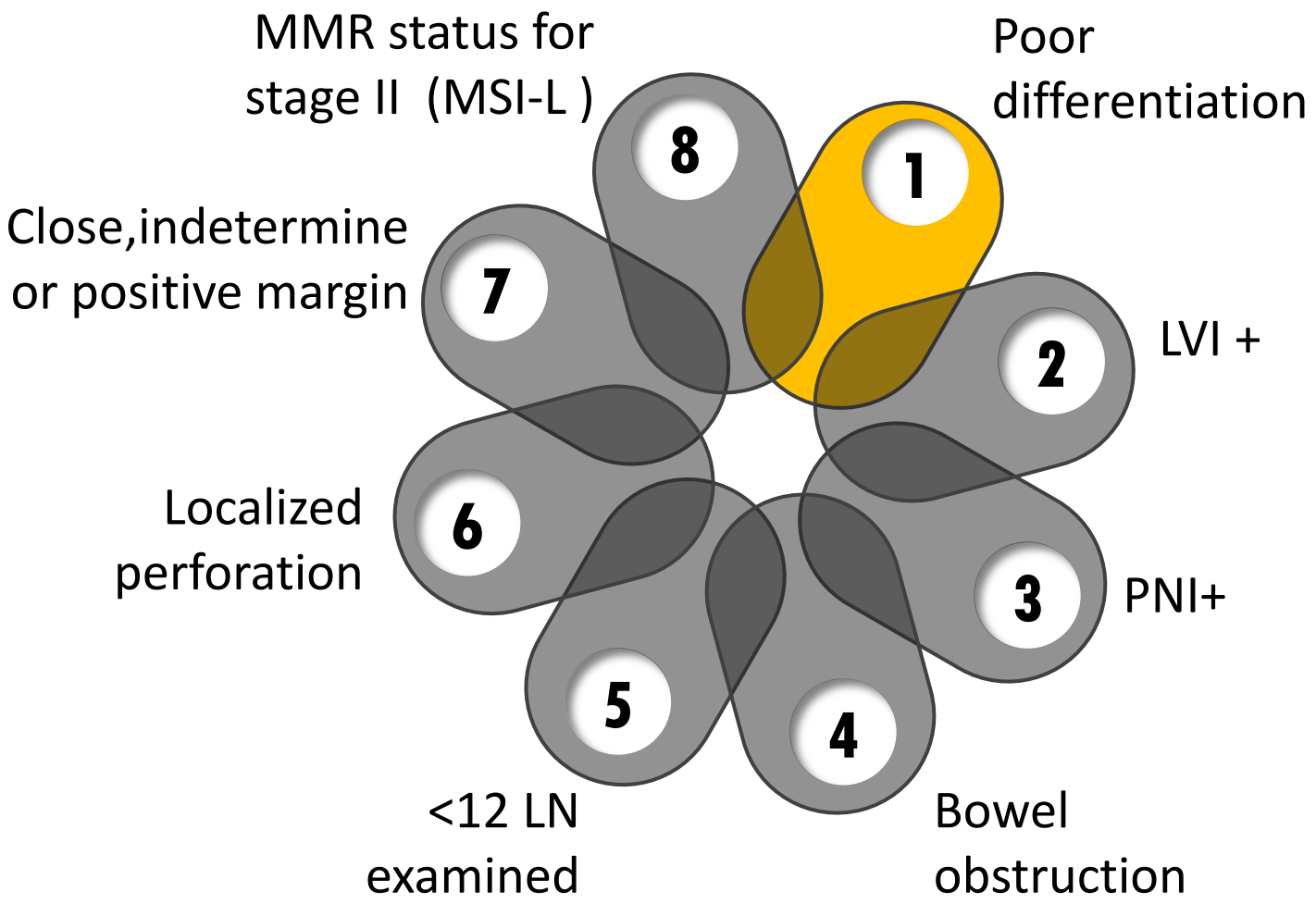
M staging of colon cancer -8 th AJCC classification



8 parameters which should be seen in formalin fixed pathological specimen.

1. Grade of tumor
2. Depth of penetration (T)
3. N status .Minimum of 12 LN need to be examined
4. Margin status, mainly circumferential
5. Lympho vascular space invasion
6. Perineural invasion
7. Peritumoral deposits /satellite nodules
8. MSI or MMR testing :if family history see.

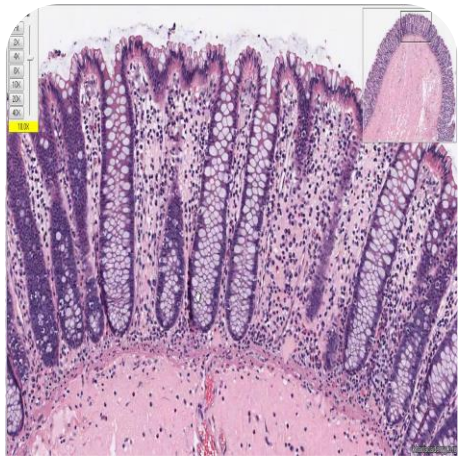
Pathological high risk features of recurrence- Poor prognostic features



Work up of non metastatic colon mass appropriate for resection.

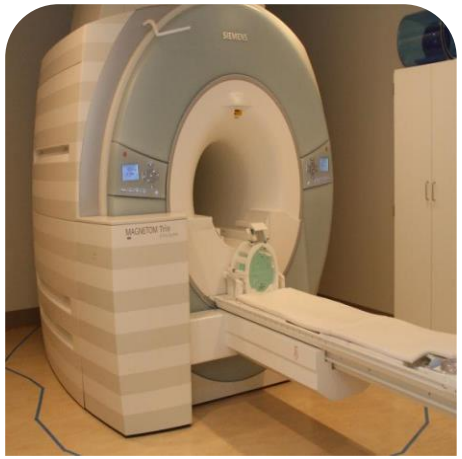
Colonoscopy.

- Rectosigmoid MC site
- Bx &polyp removal
- Synchronous precancerous lesion



Biopsy & path.

High risk factors-poorly diff./LVI/PNI//local perforation/margin /LN examined



Radiology.

- MRI pelvis-low lying sigmoid
- CT thorax/abd
- PET:not indicated.

Hgb (g/dL)	5	5.5
MCV (fL)	63.9	64
RDW (%)	26.5	26.2
Platelets (x 10^3/mm^3)	71	43
WBC (x 10^3/mm^3)	3.7	4.3
Reticulocyte count (%)	0.2	ND

*After first red blood cell transfusion.

†After second red blood cell transfusion and discharge day.

Hgb = hemoglobin; MCV = mean corpuscular volume; ND = not done; cell.

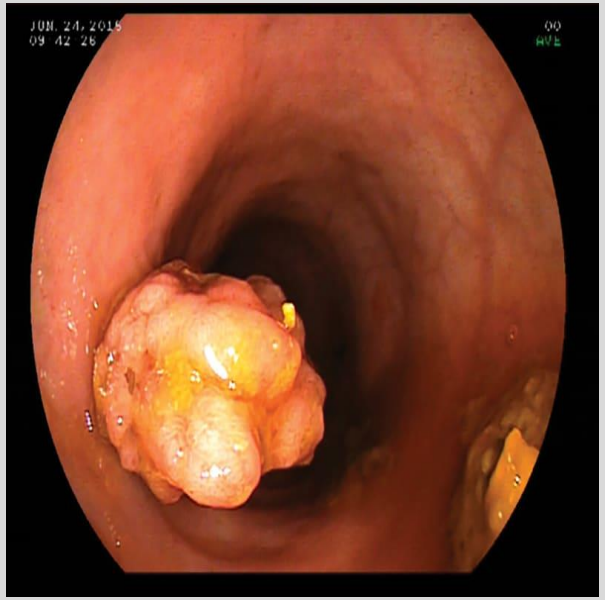
Blood parameter

- CBC, blood chemistry
- CEA

Gene assay

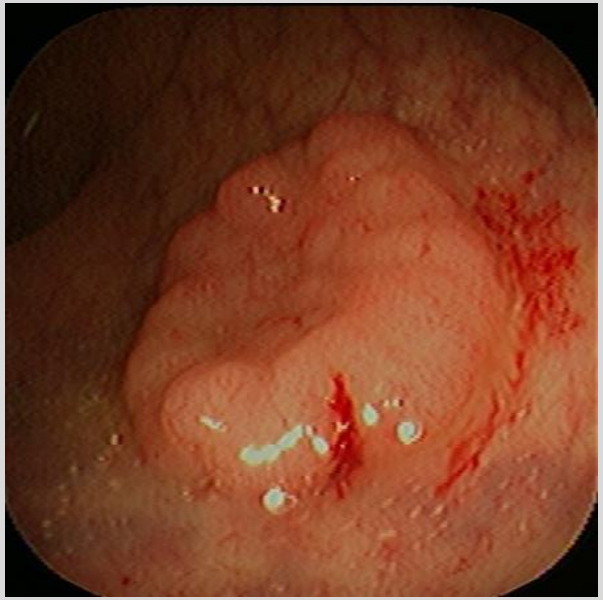
Not recommended except MSI or MMR testing :if family history see

Management of Colonoscopic detected invasive polyp.



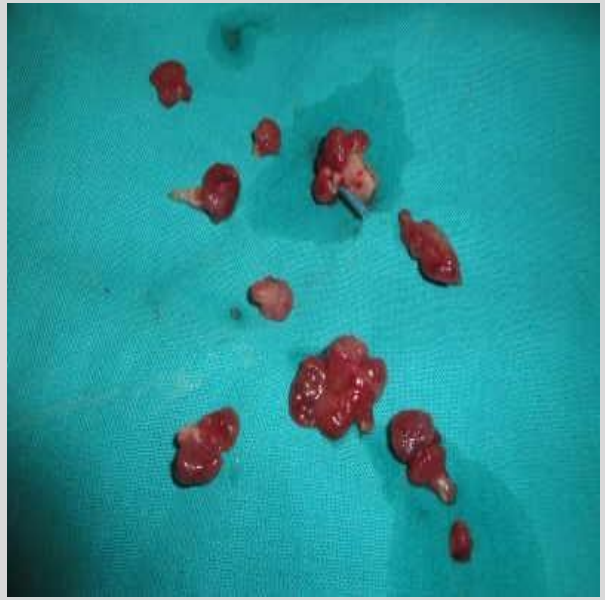
Pedunculated

Complete endoscopy excision with negative margin & keep on follow up



Sessile

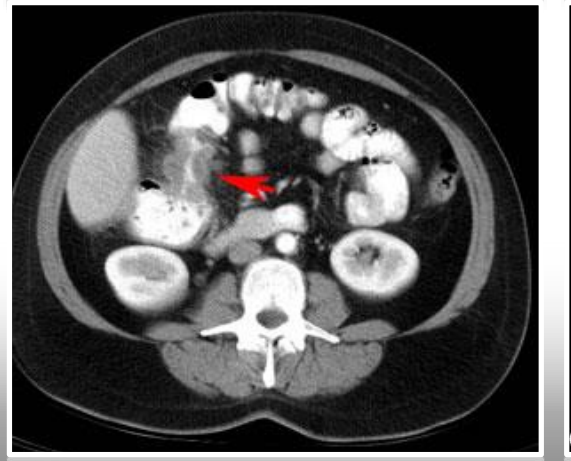
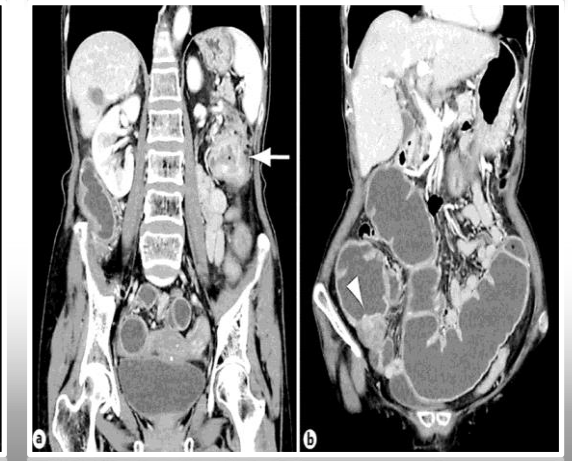
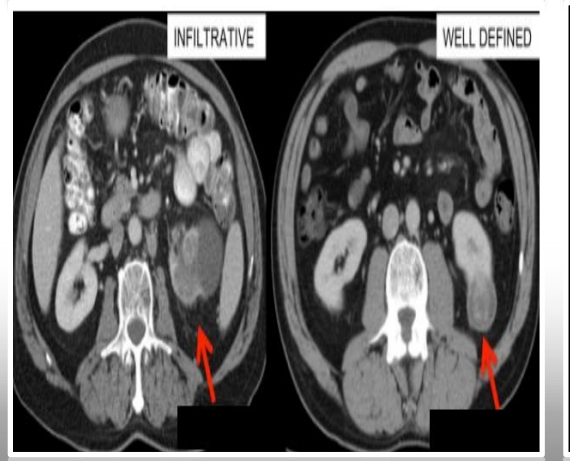
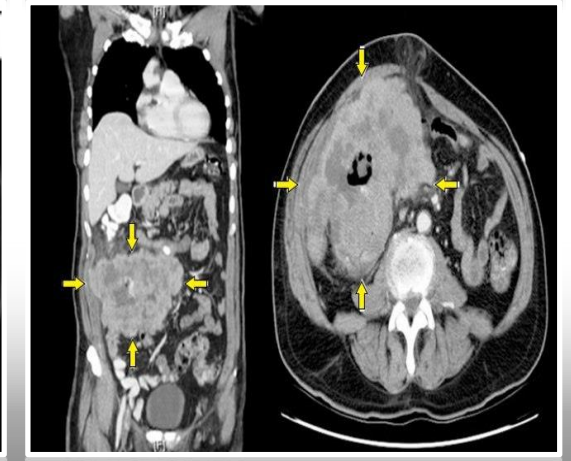
Colectomy with en bloc LND



Fragmented specimen

Colectomy with LND as margin cannot be assessed

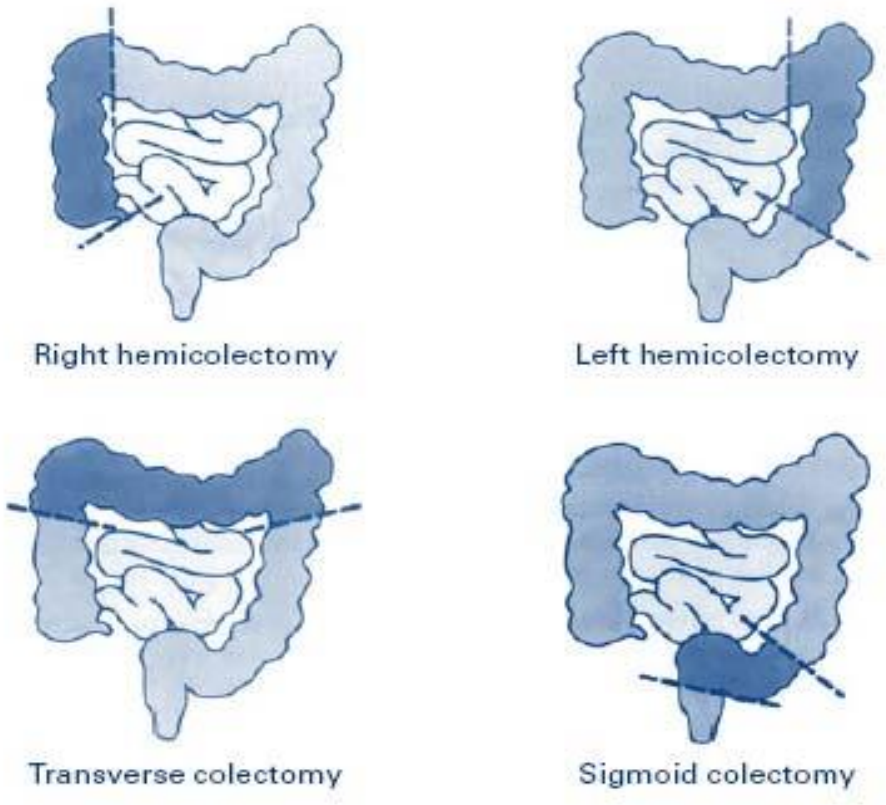
Options of Primary t atment for no metastat colon cancer appropriate resection as pe ork u

Surgery	Diversion /stent(distal lesions) followed by Sx	NACT followed by Sx.	Preoperative CRT followed by Sx.
			

Adjuvant treatment after primary treatment as per pathologic staging of non metastatic colon cancer.

T1s/T1/T2/T3/NO (MSI-H T3/4)	T3,NO with high risk features T4,NO with MSS (high risk stage II)	T1-3,N1 (low risk stage III	T4,N1-2;T any N2 (high risk stage III)
• Observation alone	Adjuvant chemotherapy +/- radiotherapy	Adjuvant chemotherapy	Adjuvant chemotherapy +/- radiotherapy

4 major types of colectomy as per tumor location



A colectomy may be done anywhere within the shaded areas of the diagrams.

Colon resection

Include 5 cm of segment on either side.
Always consider regional LN dissection .

Minimally invasive colectomy(Laproscopic/robotic) approaches.

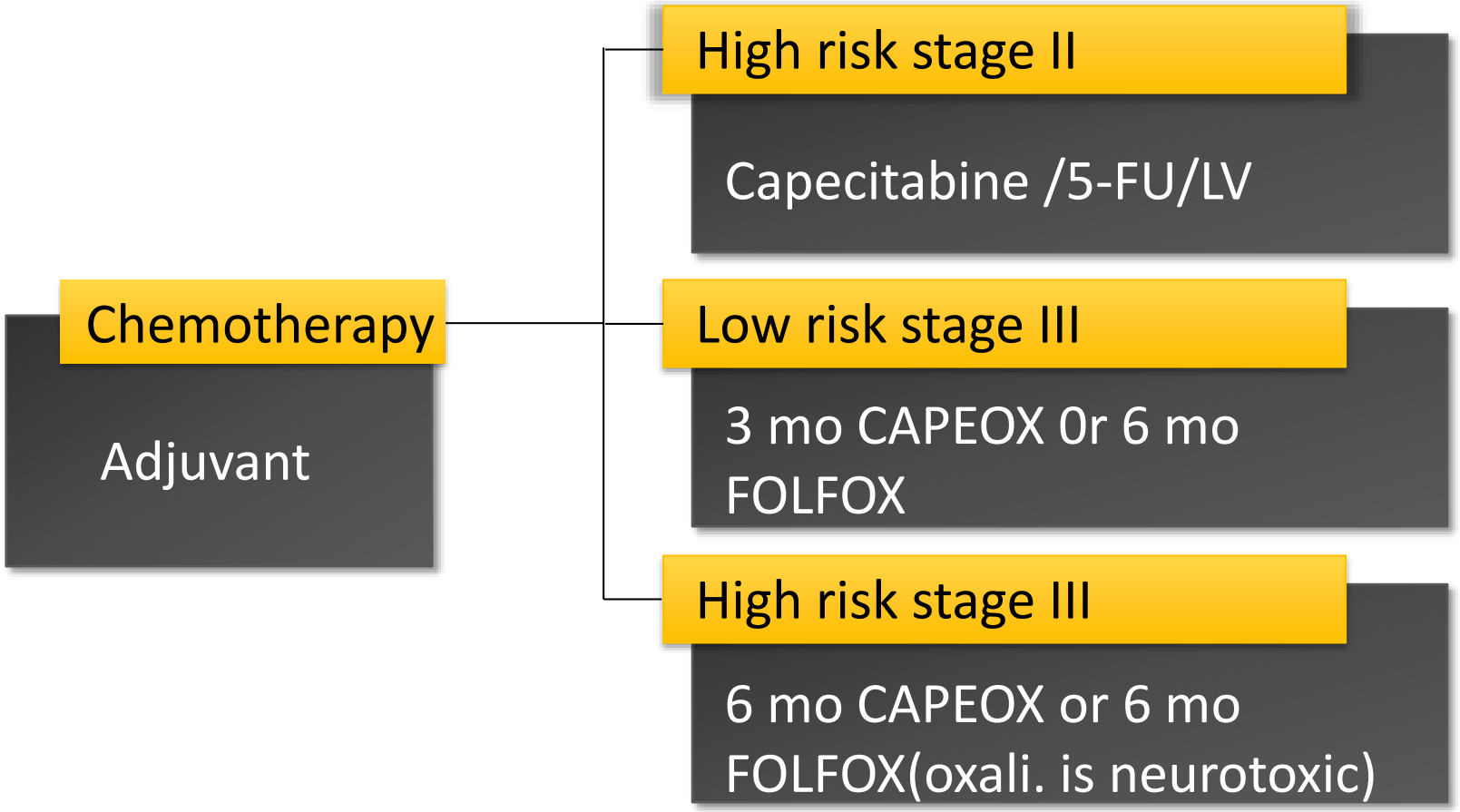
Negatives

- Not recommended for acutely obstructed or perforated or locally invasive to surrounding structure tumors
- High risk of abdominal adhesions.

Positives

- Less blood loss,short stay
- Shorter time of bowel recovery ,less infection rate
- Best for left side cancer

Adjuvant chemotherapy recommended only for high risk stage II & stage III cases.



Adjuvant radiotherapy recommendations.

Initially unresectable to make it resectable.

Post op . T4b

(perforation,residual disease post resection)

Target volume definition.

10-20 Gy additional boost
(by EBRT/IORT)

Tumor bed defined by
preop.imaging & surgical clips
Dose 45-50Gy/25-28#

Institution policy

50-60% develop metastasis with liver as most common site.

Metachronous

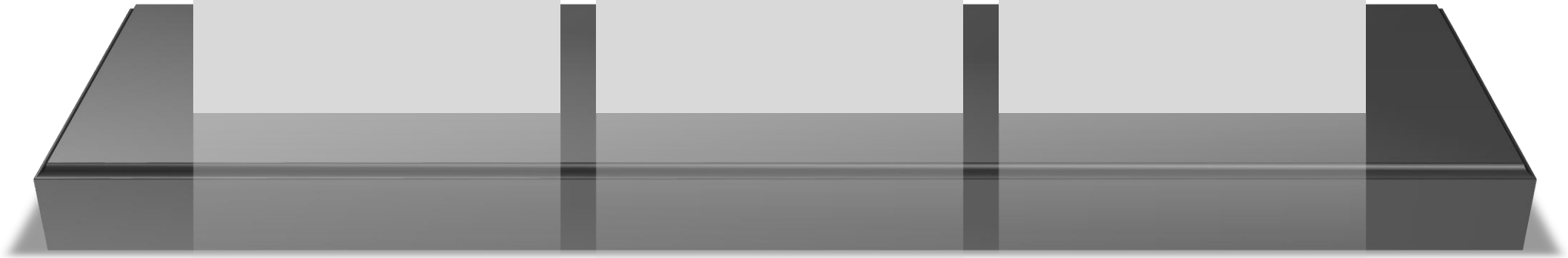
MC type of metastasis in colon cancer
Develops after initial treatment

Synchronous

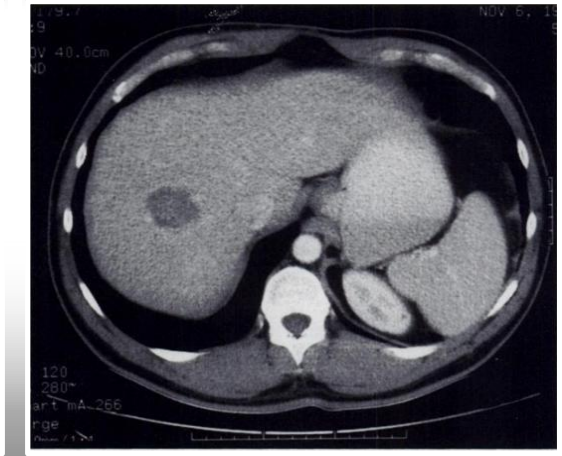
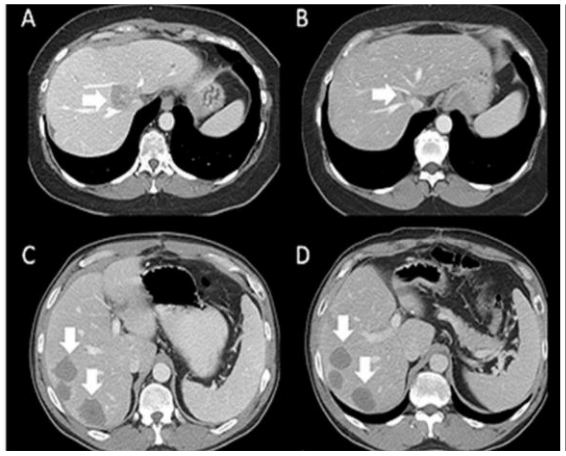
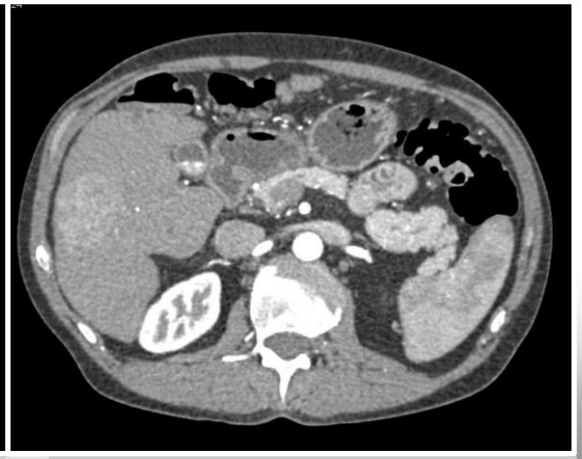
Occur in 20-34 % cases
Metastasis at time of initial diagnosis
Bad prognosis

Additional test recommended for metastatic colon disease.

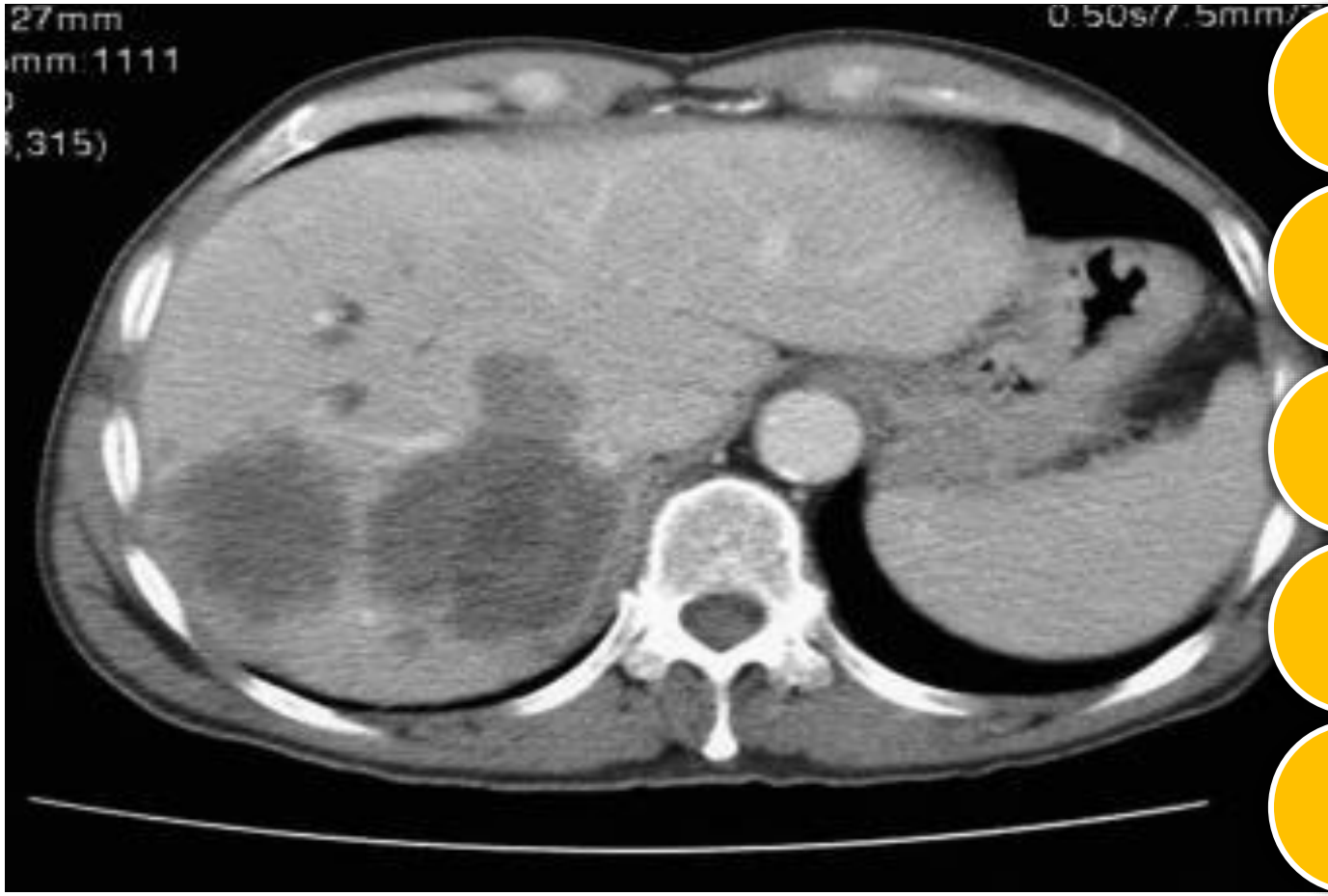
Imaging	Gene status test.	Gene testing.
• PETCT in presence of potentially resect able lesions.	• KRAS/NRAS . • BRAF mutation	• MMR(IHC)& • MSI(PCR) mutation analysis if not done initially.



Goal of primary treatment is to achieve complete resection/ablation in metastatic resect ab..Discuss MDT
To achieve goal use 6 perioperative FOLFOX/CAPOX.

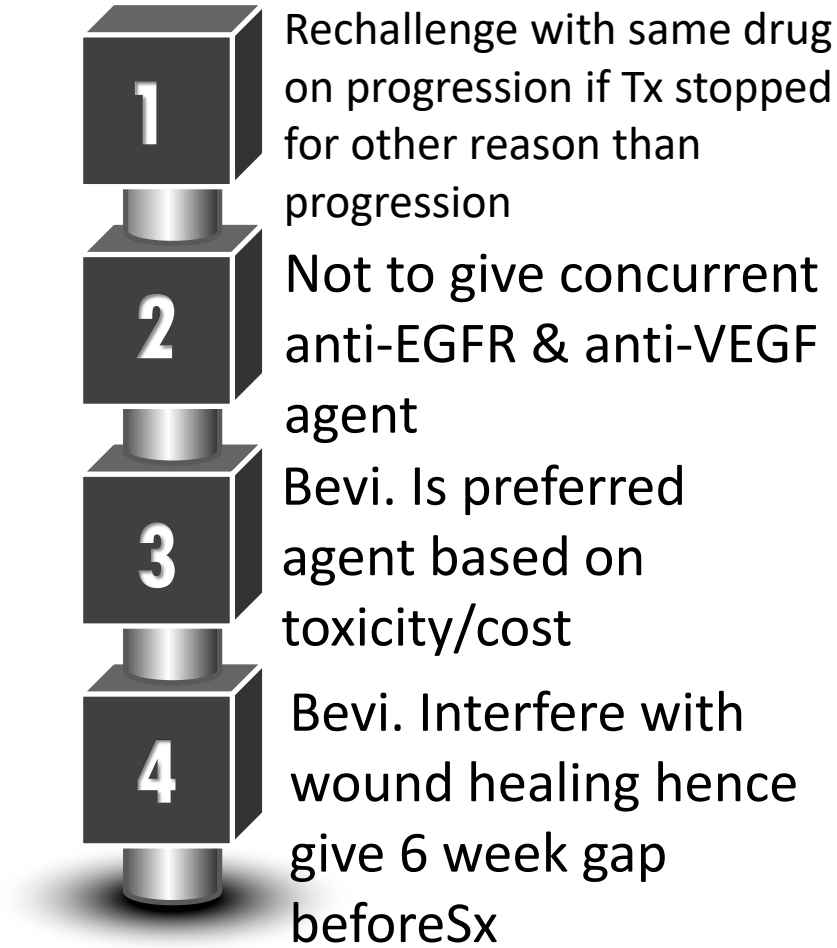
Resection/or Cryoablation (best for subcapsular)	Ablation (RFA:size <3cm/microwave)/ or SBRT	SBRT (Only 700cc of viable liver<15Gy with dose 12-20Gy/3 #)	Preoperative portal vein embolization to expand liver remnant
			

In unresectable metastatic lesions use chemotherapy with biological agents & reassess every 2 mo for resection.

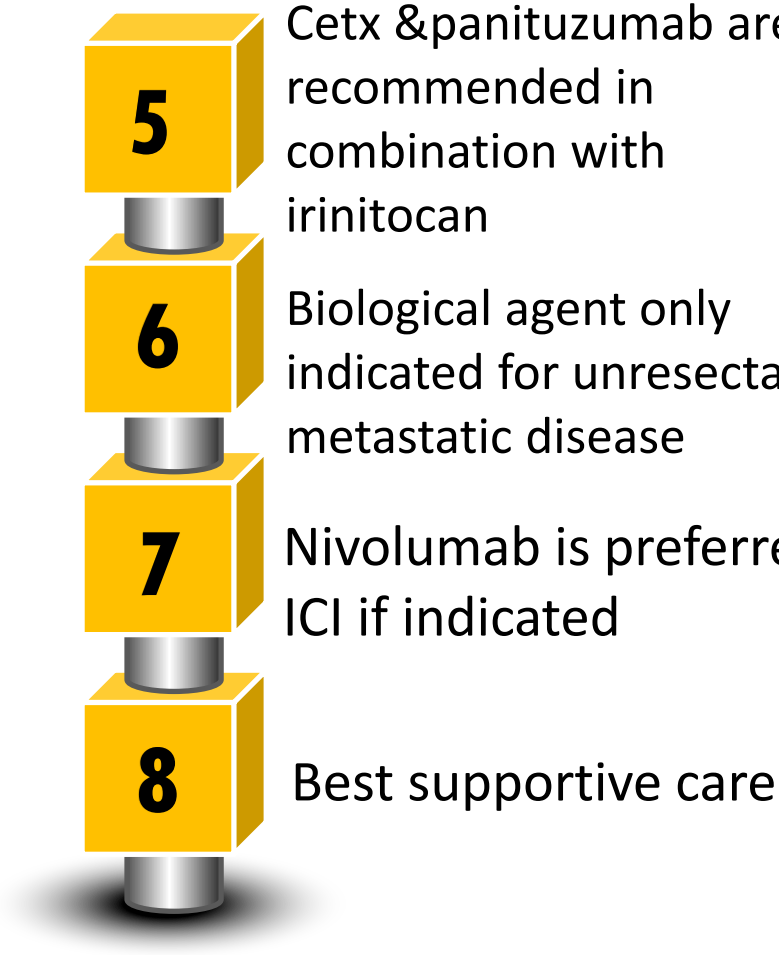


1. FOLFOXIRI+ Bev.-right side
2. FOLFIRI+ cetx./pani.;left side wild type KRAS/NRAS
3. Nivo/pembro. dMMR/ MSI-H
4. Add vemurafenib If BRAF mutations positve
5. If disease progressed with all available regimes-Regorafenib/Yt 90 chemoembolisation

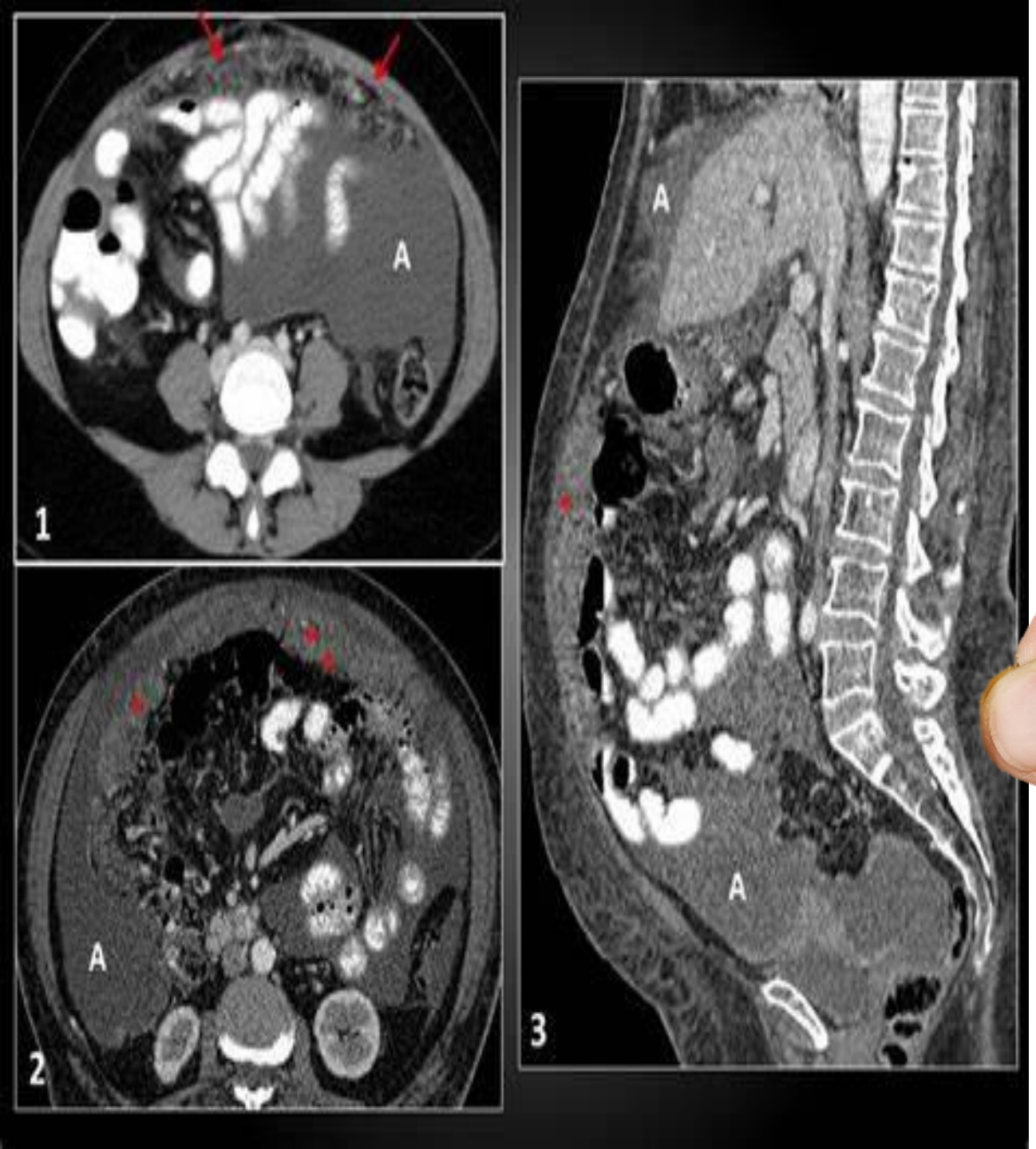
Points to be kept in mind while planning systemic therapy for metastatic disease



1. Rechallenge with same drug on progression if Tx stopped for other reason than progression
2. Not to give concurrent anti-EGFR & anti-VEGF agent
3. Bevi. Is preferred agent based on toxicity/cost
4. Bevi. Interfere with wound healing hence give 6 week gap beforeSx



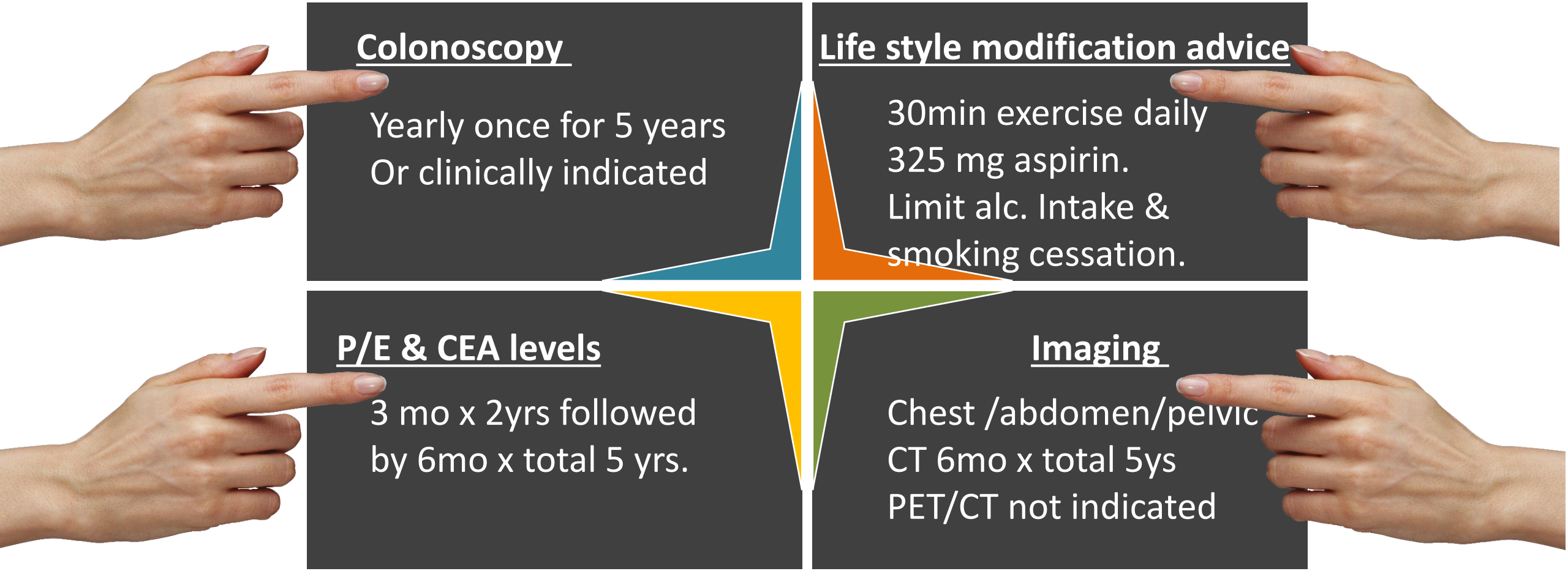
5. Cetx &panituzumab are recommended in combination with irinitocan
6. Biological agent only indicated for unresectable metastatic disease
7. Nivolumab is preferred ICI if indicated
8. Best supportive care



Peritoneal carcinomatosis

- Seen in 17% MCRC cases.
- TOC is peritoneal stripping surgery (if R0 resection is possible) followed by HIPEC
- If extensive disease then palliative chemotherapy with caution on use of bevacimumab due to high risk of perforation.

Surveillance post treatment



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