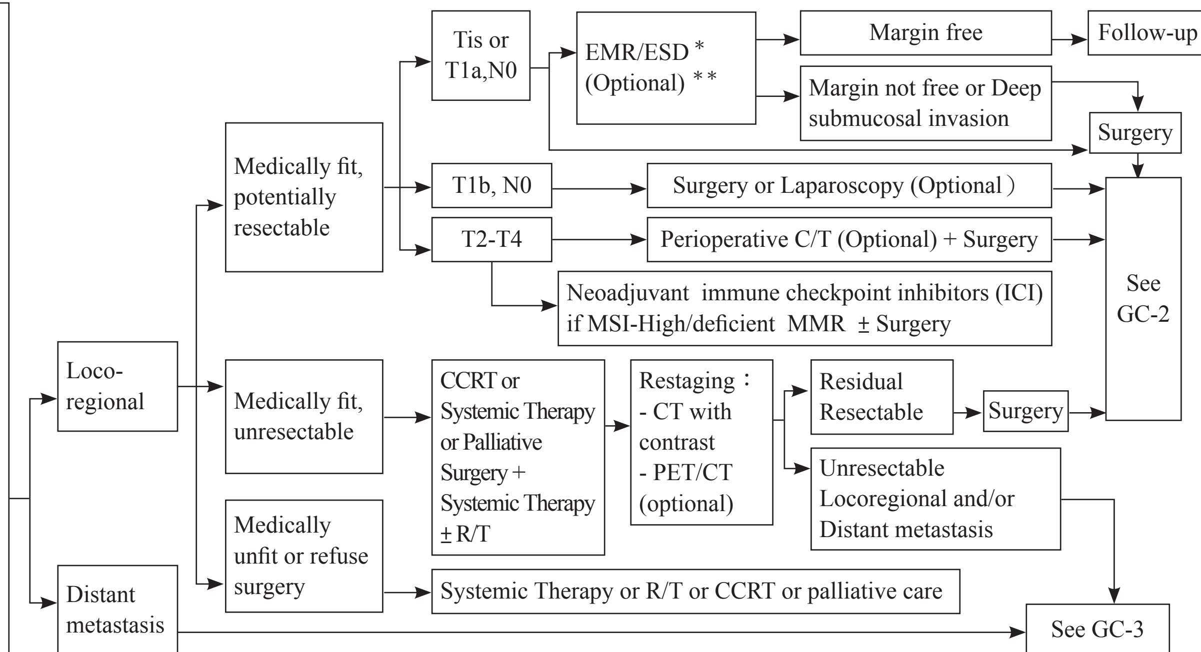
Gastric Cancer

# 《 GC-1 》

## Work up

**Necessary**
- H&P
- Chest X-ray
- Abd-Pelvis CT with contrast
- UGI endoscopy + Biopsy
- Nutritional assessment and counseling
- Chest CT with contrast (HIPEC Necessary )
- Her2/neu (stage IV)
- MMR (stage IV)

**Optional**
- Her2/neu (stage IV except)
- MMR (stage IV except )
- PD-L1
- NGS
- MSI
- Diagnostic Laparoscopy
- UGI series
- Endoscopic ultrasound (EUS)
- Bone scan
- PET/CT
- H. pylori status

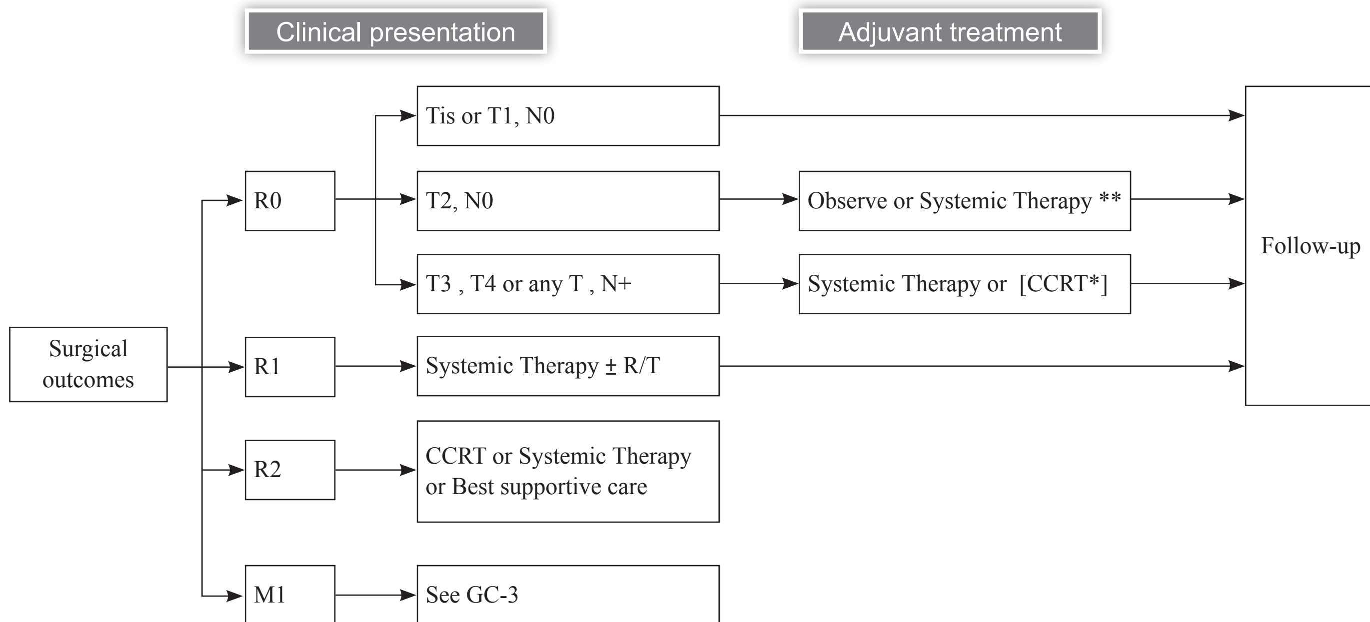



∗ EMR : Endoscopic mucosal resection ; ESD : Endoscopic submucosal dissection .

※：Tis, T1, T2, T3, T4: tumor size and range; N0: no lymph node metastasis .

∗ ∗ :choose endoscopic resection, EUS must be done before the operation

## 《 GC-2 》



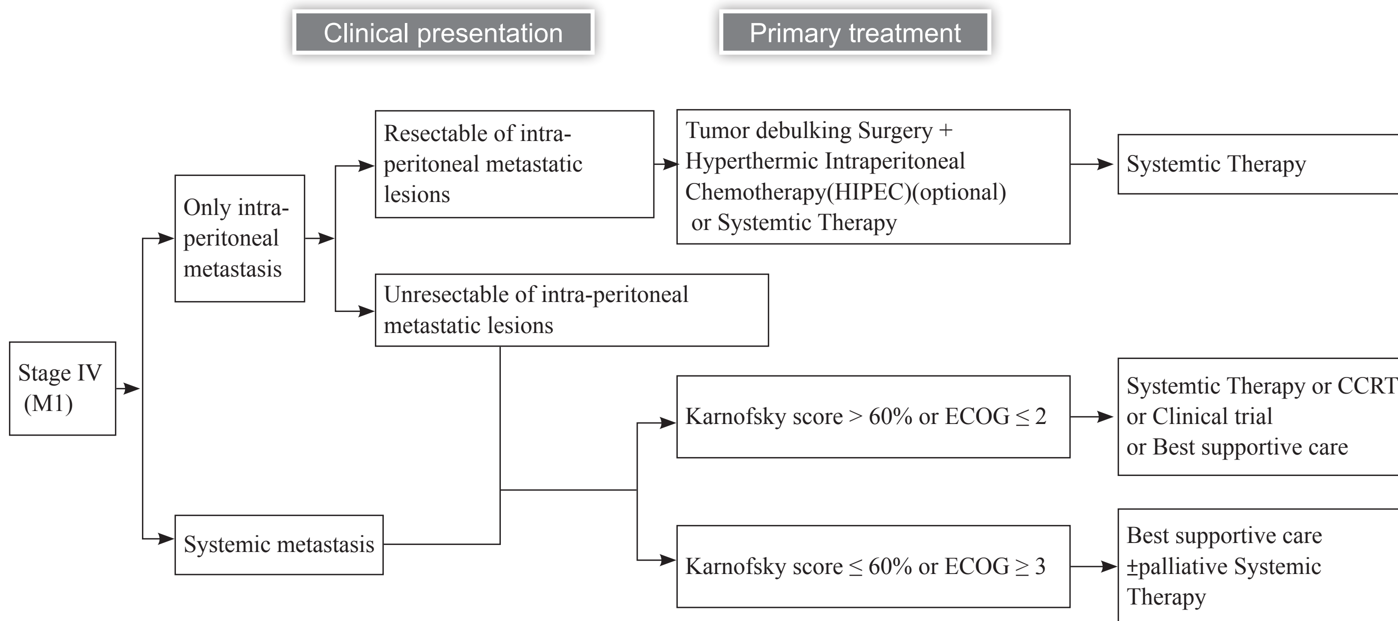

＊ stage III or higher, N2-3 or below D2 dissection or if necessary after tumor board discussion → Adjuvant CCRT.

＊＊ NCCN ( T2.N0: High risk features include poorly differentiated or higher grade cancer. Lymphovascular invasion. neural invasion or < 50 years of age .)

※：Tis, T1, T2, T3, T4: tumor size and range; N0: no lymph node metastasis.

※：Note: For pathology stage III and above, add Her2/neu; MSI / MMR by IHC (optional)

# 《 GC-3 》




* Hyperthermic Intraperitoneal Chemotherapy (HIPEC) which has been approved as Self-funded surgical project by Department of Health, Taipei City Government.

※：If bleeding or obstruction , palliative surgery or R/T or Nutritional support is considered.

## 《 Follow-up 》

1. 1-2 years after surgery.
   (1) Chest / Abdomen image and tumor marker every 3-6 months,At least one PES is required within one year after surgery. PES at clinical indication.
   (2) Treated by ESD、EMR, 1years after surgery PES every 6 months, then one PES every year.

2. 3-5 years after surgery.
   (1) Chest / Abdomen image and tumor marker every 6-12 months. PES at clinical indication.
   (2) Treated by ESD、EMR, one PES every 6 months.

3. 5 years after surgery should be check chest / Abdomen imaging and tumor markers at clinical indication.

# 《 Reference 》

1. NCCN Clinical Practice Guidelines in Oncology. Gastric Cancer. Version 4. 2024.
2. Gill RS, Al-Adra DP, Nagendran J, et al. Treatment of gastric cancer with peritoneal carcinomatosis by cytoreductive surgery and HIPEC: A ystematic review of survival, mortality, and morbidity. Journal of Surgical Oncology 2011;104: 692–698.
3. Ung L, Chua TC, Morris DL, Cure for peritoneal metastases? An evidence-based review. ANZ J Surg. 2013; 83 (11) : 821-6.
4. Levine EA, Stewart JH, Shen P, Russell GB, Loggie BL, Votanopoulos KI. Intraperitoneal chemotherapy for peritoneal surface malignancy: experience with 1,000 patients. J Am Coll Surg. 2014 Apr;218(4):573-85.
5. Jorgensen JT, Hersom M. HER2 as a Prognostic Marker in Gastric Cancer - A Systematic Analysis of Data from the Literature. J Cancer 2012;3:137-144
6. Grabsch H, Sivakumar S, Gray S, et al. HER2 expression in gastric cancer: Rare, heterogeneous and of no prognostic value - conclusions from 924 cases of two independent series. Cell Oncol 2010;32:57-65
7. Choi KS, Jung HY, Choi KD, et al. EMR versus gastrectomy for intramucosal gastric cancer: comparison of long-term outcomes. Gastrointest Endosc 2011;73:942-948
8. Smalley SR, Benedetti JK, Haller DG, et al. Updated Analysis of SWOG-Directed Intergroup Study 0116: A Phase III Trial of Adjuvant Radiochemotherapy Versus Observation After Curative Gastric Cancer Resection. Journal of Clinical Oncology 2012;30:2327-2333.
9. Kang JH, Lee SI, Lim do H, et al. Salvage chemotherapy for pretreated gastric cancer: a randomized phase III trial comparing chemotherapy plus best supportive care with best supportive care
10. Repici A, Zullo A, Hassan C, et al. Endoscopic submucosal dissection of early gastric neoplastic lesions: a western series. Eur J Gastroenterol Hepatol 2013;25:1261-1264.
11. Gill RS, Al-Adra DP, Nagendran J, et al.Treatment of gastric cancer with peritoneal carcinomatosis by cytoreductive surgery and HIPEC: A systematic review of survival, mortality, and morbidity. Journal of Surgical Oncology 2011;104: 692–698.
12. Ung L, Chua TC, Morris DL, Cure for peritoneal metastases? An evidence-based review. ANZ J Surg. 2013; 83 (11) : 821-6.
13. Levine EA, Stewart JH, Shen P, Russell GB, Loggie BL, Votanopoulos KI. Intraperitoneal chemotherapy for peritoneal surface malignancy: experience with 1,000 patients. J Am Coll Surg. 2014 Apr;218(4):573-85.
14. Rudlo ff U, Langan RC, Mullinax JE, Beane JD, Steinberg SM, Beresnev T, Webb CC, Walker M, Toomey MA, Schrump

D, Pandalai P, Stojadinovic A, Avital I., Impact of maximal cytoreductive surgery plus regional heated intraperitoneal chemotherapy (HIPEC) on outcome of patients with peritoneal carcinomatosis of gastric origin: results of the GYMSSA trial. J Surg Oncol. 2014,110(3):275-84.

15. Kim KW, Chow O, Parikh K, Blank S, Jibara G, Kadri H, Labow DM, Hiotis SP.Peritoneal carcinomatosis in patients with gastric cancer, and the role for surgical resection, cytoreductive surgery, and hyperthermic intraperitoneal chemotherapy. Am J Surg. 2014, 207(1):78-83.

# Principle of Radiation Therapy for Gastric Cancer



一、**Target Volume**

1. Gastric Tumor
2. Postoperative residual tumor or Tumor/Gastric bed
3. Nodal metastases
4. Pertinent nodal groups

二、**Dose / Fraction**

1. Postoperative without residual tumor：48Gy(45-50.4Gy) /Fractions 27(25-28fx)
2. Postoperative with residual tumor：53Gy(50.0-55.8Gy) /Fractions 28(25-31fx)

三、**Treatment :**

Intensity-modulated radiation therapy(IMRT) is used, including Volumetric modulated arc therapy(VMAT) and Tomotherapy. Image-guided radiotherapy(IGRT) may be used in clinical settings. Treatment options including Simultaneous integrated boost(SIB) technique.

四、**References :**

1. NCCN clinical practice guidelines in oncology-Gastric cancer. Version 4, 2024.
2. Willett CG, et al. Principles and Practice of Radiation Oncology. 5th edition: Philadelphia: Lippincott Williams & Wilkins; 2007. pp. 1318-1335.
3. RTOG 0114 Protocol Information Randomized Phase II Comparison of Two Cisplatin-Paclitaxel Containing Chemoradiation Regimens in Resected Gastric Cancers 4.2011.