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Polish consensus on gastric cancer diagnosis and treatment – update 2022

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This document – "Polish consensus on gastric cancer diagnosis and treatment – update 2022" – represents an expert consensus following a year's worth of dedicated effort by a team of specialists throughout 2021, put forward in a conference in December 2021 in Krakow, and finalized below for publication in 2022. The effective date of this document is June 14th 2022. The work that went into updating this consensus was made under auspices of the Polish Society of Surgical Oncology and the Association of Polish Surgeons.

Key words: chemotherapy, early gastric cancer, endoscopic treatment, gastric cancer, guidelines, surgical treatment

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History

Specific interest regarding issues related to gastric cancer management in Poland dates back to the 1970s. A project, "Polish Research in Gastric Cancer" was launched in 1977 at the initiative of Prof. Tadeusz Popiela and Prof. Tadeusz Koszarowski. The first edition of the Polish Consensus – Principles of Gastric Cancer Management – was published in the Polish Journal of Surgery at a conference memorializing the 20th anniversary of this project in 1997 [1]. Subsequent consensus updates followed in 2013 and 2017 [2, 3].

Consensus update methods

The Delphi consensus method was used for the purposes of this update [4]. As this current consensus is an update to the previous version, the first stage was modified to limit the group of specialists selecting points for discussion to 30 people. Special attention was paid to issues that may have changed over the past 5 years of evidence-based medicine. This stage produced a list of questions that were linked via email, along with a letter outlining the purpose and principles behind the consensus, to a panel of 92 experts in general and oncological surgery, clinical oncology, pathomorphology, oncological radiotherapy, and gastroenterology. Each question was answered using a seven-point Likert scale. Respondents to this questionnaire (N = 66) received the same questions again along with additional information regarding the voting distribution of all respondents. With this supplemental information, each individual could choose to either keep or change their initial vote. Forty-five specialists responded to this second questionnaire. Questions with 75% concordance to "yes", "definitely yes", "no", or "definitely no" were considered a definitive consensus. Questions with convergent, yet sub – 75%, responses were discussed and voted on during a conference of specialists in Krakow on December 10, 2021. If the final vote was conclusive, the question was determined to have reached a definitive consensus. It should be noted that consensus does not constitute a formal guideline, the methodology and form of which must adhere to appropriate conditions [5], but it is an objective representation of expert clinical opinions nonetheless.

Some points below include comments meant to clarify or refine the consensus recommendations.

Requirements for gastric cancer treatment centers

1. It is recommended that patients with gastric cancer be treated in centers that have adequate experience and a multidisciplinary team of specialists on site.
2. In centers treating gastric cancer, it is recommended to create and maintain a prospective patient registry.
3. Treatment of gastric cancer must be led by a multidisciplinary team (MDT) of experienced specialists.
4. The MDT must include at least the following specialties: general/ oncological surgery, clinical oncology, and radiotherapy.
5. Representatives of all specialties related to the treatment of gastric cancer should be involved in the MDT, namely: radiology, gastroenterology, pathomorphology, palliative medicine, and psychology.

Comment

We acknowledge that creating such a large team may not be feasible in many centers, but it is the consensus opinion that a diverse MDT would improve the quality of care and patient outcomes.

6. It is recommended that the MDT meet regularly to monitor the treatment progress as well as the percentage of patients who completed each planned stage of treatment, i.e., neoadjuvant, adjuvant, and surgical.

Comment

This recommendation goes beyond the scope of an oncological concilium within the "national fast oncological track in Poland", where management of a given patient is mandatory discussed once.

7. Gastric cancer treatment centers must ensure access to the following equipment and medical personnel:
   - 24/7 access to operating rooms,
   - 24-hour intensive care units,
   - 24-hour endoscopic suites, especially the upper gastrointestinal tract,
   - intraoperative endoscopic examination,
   - intraoperative histopathological examination,
   - intraoperative ultrasound.
8. Combination or multimodal therapy (chemotherapy and radiotherapy) on site or via dependable contractual agreements with a third party.
9. It is recommended that elective surgeries take place at specialized centers or units with extensive clinical experience, where at least 30 gastric cancer resections are performed annually.

Comment

According to the consensus, this number represents an adequate level of expertise considering the total number of gastric cancer resections performed in Poland each year.

10. It is likewise recommended that treatment centers monitor at least the following outcome measures:
    - inpatient mortality,
    - prevalence of anastomosis leakage or fistula formation,

- percentage of complications ranked on severity per the Clavien-Dindo scale,
- total hospitalization time,
- classification of radical resections,
- patients' survival rate,
- stage on presentation.

11. Centers providing surgical treatment of gastric cancer should be subject to periodic external audits.

Comment

Given the current state of gastrointestinal neoplasm management, including gastric cancer, there is no independent governing entity to access centers for compliance with the above standards.

Consensus regarding preoperative diagnostics

1. Thorough and comprehensive medical evaluation, specifically the endoscopic examination of the upper gastrointestinal tract, of every patient with suspected gastric cancer is critical.
2. Endoscopic examination must be performed in accordance with guidelines described by the Polish Society of Gastroenterology, paying special consideration to the quality indicators established for gastrointestinal endoscopy: http://www.ptg-e.org.pl/Wysznejakosci--endoskopii-2014-,140.html.

Comment

The consensus does not discuss individual guidelines regarding the endoscopic examination, relying instead on the above-mentioned resource for guidance.

3. It is recommended to collect multiple samples [6–8] during endoscopic examinations for histopathological analysis.

Comment

In the case of unresectable or disseminated tumors, additional assessment of HER2 expression should be performed on these samples.

4. Computed Tomography (CT) with intravenous and oral contrast of the abdominal, thoracic, and pelvic cavities is necessary in all patients with gastric cancer.

Comment

The inclusion of all three regions for CT examination was approved separately.

5. Routine PET-CT is not recommended. PET-CT can be performed when the presence of distant metastases is clinically suspected but inadequately visualized through other imaging studies.

Comment

The use of PET-CT in gastric cancer is not currently reimbursed. Voting members of the consensus however acknowledge expanding the indications for PET-CT in certain cases of gastric cancer.

6. Routine endoscopic ultrasonography (EUS) is not recommended. However, EUS is required for every patient with gastric cancer and planned endoscopic treatment.
7. It is recommended to perform a diagnostic laparoscopy with peritoneal lavage to best assess the stage of advance of gastric cancer before initiating treatment, if possible.

Comment

The voters rejected the absolute requirement to perform a diagnostic laparoscopy due to the possibility it will delay treatment due to additional inpatient stay. However, there is no doubt as to the clinical validity of diagnostic laparoscopy, especially in patients with advanced gastric cancer without clinically evident peritoneal dissemination [8].

8. A thorough and comprehensive medical examination is recommended for all patients to determine their overall state of health, taking special consideration for comorbid or chronic illnesses, prior to beginning treatment.
9. It is necessary to assess a patient's overall nutritional status, and take steps to optimize their nutritional status when indicated, before beginning treatment.

Comment

Early nutritional intervention should take place during the diagnostic and therapeutic process. Nutritional supplementation is mandatory in patients with confirmed malnutrition.

10. For patients with adenocarcinoma of the esophageal-gastric junction (EGJ), it is necessary to determine the type of tumor according to the Siewert classification. Type I and II tumors should be treated according to guidelines for esophageal cancer, while type III tumors according to guidelines for gastric cancer.

Comment

Apart from the above statements, the consensus does not address the particular standards of EGJ cancer management.

Consensus regarding pathomorphological diagnostics

1. It is recommended that pathomorphological evaluations be performed according to guidelines formulated by the Gastrointestinal Tract Group of the Polish Society of Pathologists (with appropriate modifications given changes to the classifications updates) http://pol-pat.pl/index.php/standardy/.

Table I. Assessment of the response to preoperative treatment

Category	Code	Description
complete response	R0	no evidence of live cancer cells
near complete response	R1	individual live cancer cells
partial response	R2	evidence of tumor regression occurring in larger clusters, not individual cells or limited to small groups
poor or no response	R3	no or very little cancer regression

2. The gold standard methodology for staging gastric cancer is the current AJCC/UICC TNM classification (VIII edition, 2017).
3. Microscopic examination of the sample after gastrectomy should include an assessment of responsiveness to any preoperative treatment, where appropriate. The consensus recommends using the classification established by the College of American Pathologists and International Collaboration on Cancer Reporting (tab. I).
4. Determining HER2 receptor expression is necessary in patients with advanced gastric cancer. This also applies to samples taken during endoscopic examination in patients where gastric resection is not planned.
5. Microscopic analysis following gastric resection should include microsatellite instability (MSI) testing.

Comment

According to current data [6, 7], tumors showing MSI probably do not benefit from adjuvant chemotherapy and have a better prognosis as compared to patients with tumors showing microsatellite stability. They may, however, benefit from immunotherapy, but that is currently being investigated.

There was no consensus regarding the statement

Microscopic examination following gastrectomy should include the evaluation of PD-L1 expression (programmed death ligand 1). The discussion raised limited scientific data regarding the introduction of PD-L1 testing into routine practice.

Consensus regarding surgical treatment

1. The goal of surgical gastric cancer treatment is to achieve a complete R0 resection of the tumor.
2. A partial gastrectomy is recommended in the case of distal gastric cancer if doing so can achieve an adequate proximal margin.
3. The optimal proximal margin of the resected specimen following distal gastrectomy when assessed macroscopically is at least 5 cm.

Comment

As in the previous version of the consensus, there is no distinction between the histological types of the tumor.

4. A proximal gastrectomy is allowed in the case of gastric cancer located in the upper part of the stomach.
5. The extent of lymphadenectomy is to be classified by the D-level criteria per the Japanese Gastric Cancer Association (JGCA) classification (tab. II, III).
6. In cases of patients with advanced gastric cancer (>cT1b) and those with planned curative gastrectomies, it is recommended to perform routine D2 lymphadenectomy.
7. D1/D1+ lymphadenectomy is allowed for patients with stage cT1a gastric cancer.
8. D1/D1+ lymphadenectomy is allowed for patients with stage cT1bN0 gastric cancer if the tumor is <1.5 cm and shows a high degree of differentiation.
9. Lymphadenectomy beyond D1 is not recommended in cases of palliative resections.
10. Routine splenectomy is not recommended except in cases where direct neoplastic infiltration of the spleen is observed or where there is suspicion of metastasis to the splenic hilum lymph nodes.
11. In cases of stage cT4b tumors, it is necessary to evaluate the feasibility of multiorgan resection to achieve an R0 resection.
12. A palliative, non-radical gastrectomy is allowed to reduce the severity of symptoms or complications related to the tumor, i.e., bleeding, obstruction, perforation.
13. It is not recommended to perform a gastrectomy with the intent of cytoreduction in patients lacking indications for palliative surgical intervention in order to mitigate complications associated with the tumor, i.e., bleeding, obstruction, perforation.
14. In patients with an isolated distant metastasis (oligometastatic disease), surgery is possible as long as it achieves an R0 residual margin for both the primary and metastatic tumors.
15. In the case of early gastric cancer, laparoscopic distal gastrectomy is considered to be equivalent to laparotomy if performed in centers with adequate experience. Laparoscopic total gastrectomy is also considered equivalent for early gastric cancer.
16. In the case of advanced gastric cancer, laparoscopic distal gastrectomy is considered to be equivalent to laparotomy if performed in centers with adequate experience. Laparoscopic total gastrectomy however is not considered equivalent for advanced gastric cancer
17. In the case of clinical symptoms of stenosis in patients where a radical or palliative gastrectomy is not possible, it is necessary to consider a bypass anastomosis or endoscopic stenting of the stenotic region

Table II. Anatomical definition of lymph node (LNs) station in gastric cancer

LNs station	Definition
1	right paracardial LNs, including those along the first branch of the ascending limb of the left gastric artery
2	left paracardial LNs including those along the esophagocardiac branch of the left subphrenic artery
3a	lesser curvature LNs along the branches of the left gastric artery
3b	lesser curvature LNs along the 2nd branch and distal part of the right gastric artery
4sa	left greater curvature LNs along the short gastric arteries (perigastric area)
4sb	left greater curvature LNs along the left gastroepiploic artery (perigastric area)
5	suprapyloric LNs along the 1st branch and proximal part of the right gastric artery
6	infrapyloric LNs along the first branch and proximal part of the right gastroepiploic artery down to the confluence of the right gastroepiploic vein and the anterior superior pancreatoduodenal vein
7	LNs along the trunk of the left gastric artery between its root and the origin of its ascending branch
8a	anterosuperior LNs along the common hepatic artery
8b	posterior LNs along the common hepatic artery
9	celiac artery LNs
10	splenic hilar LNs including those adjacent to the splenic artery distal to the pancreatic tail, and those on the roots of the short gastric arteries, and those along the left gastroepiploic artery proximal to its 1st gastric branch
11	proximal splenic artery LNs from its origin to halfway between its origin and the pancreatic tail end; distal splenic artery LNs from halfway between its origin and the pancreatic tail end to the end of the pancreatic tail
12a	hepatoduodenal ligament LNs along the proper hepatic artery, in the caudal half between the confluence of the right and left hepatic ducts and the upper border of the pancreas
12b	hepatoduodenal ligament LNs along the bile duct, in the caudal half between the confluence of the right and left hepatic ducts and the upper border of the pancreas; hepatoduodenal ligament LNs along the portal vein in the caudal half between the confluence of the right and left hepatic ducts and the upper border of the pancreas
13	LNs on the posterior surface of the pancreatic head proximal to the ampulla of Vater
14	LNs along the superior mesenteric vein
15	LNs along the middle colic vessels
16a1	paraaortic LNs in the diaphragmatic aortic hiatus
16a2	paraaortic LNs between the upper margin of the origin of the celiac artery and the lower border of the left renal vein
16b1	paraaortic LNs between the lower border of the left renal vein and the upper border of the origin of the inferior mesenteric artery
16b2	paraaortic LNs between the upper border of the origin of the inferior mesenteric artery and the aortic bifurcation
17	LNs on the anterior surface of the pancreatic head beneath the pancreatic sheath
18	LNs along the inferior border of the pancreatic body
19	infradiaphragmatic LNs predominantly along the subphrenic artery
20	paraesophageal LNs in the diaphragmatic esophageal hiatus

18. In the case of clinical symptoms of stenosis in the cardia, where a radical or palliative gastrectomy is not possible, it is necessary to consider either endoscopic stenting or the creation of a feeding jejunostomy.

Consensus regarding endoscopic treatment

1. Curative endoscopic treatment is allowed in select patients with early gastric cancer.
2. Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) should be performed exclusively in centers with adequate experience using these techniques.
3. The standard indications for EMR in the case of early gastric cancer are the following:
   - a high degree of histological differentiation (G1),
   - no ulceration (UL0),

Table III. The type of lymphadenectomy based on the extent of resection

Type of resection	Lymphadenectomy	LNs station
total gastrectomy	D0	lymphadenectomy less than D1
	D1	excision of LNs of stations 1 to 7
	D1+	excision of LNs in the D1 range and stations No. 8a, 9, 11p
	D2	excision of LNs in D1 and stations No. 8a, 9, 11, 12a; additionally, in the case of tumors infiltrating the esophagus, LNs should be removed from stations No. 19, 20, 110 and 111
distal gastrectomy	D0	lymphadenectomy less than D1
	D1	excision of LNs in stations No. 1, 3, 4sb, 4d, 5, 6, 7
	D1+	excision of LNs in D1 and stations No. 8a, 9
	D2	excision of LNs in D1 and stations No. 8a, 9, 11, 12a
proximal gastrectomy	D0	lymphadenectomy less than D1
	D1	excision of LNs in stations No.1, 2, 3a, 4sa, 4sb, 7
	D1+	excision of LNs in D1 and stations No. 8a, 9, 11

- infiltration limited to the mucosa (cT1a),
- tumor diameter less than 2 cm.

4. The indications for ESD in the case of early gastric cancer are the following:
   - a high degree of histological differentiation (G1),
   - no ulceration (UL0),
   - infiltration limited to the mucosa (cT1a),
   - tumor diameter greater than 2 cm.

Comment

Additional, extended criteria indicated by JGCA recommendations were not agreed upon by the consensus (tab. IV).

5. The radicality of endoscopic resection should be assessed in accordance with the JGCA classification in every case of EMR /ESD (tab. V).
6. In the case of confirmed Grade A and B resections (eCura A, eCura B) according to the JGCA, it is sufficient to perform appropriate post-operative follow-up examinations.
7. In the case of confirmed Grade C resection (eCura C) according to the JGCA, it is necessary to consider surgical intervention.
8. In the case of recurrence that is isolated to the mucosa following endoscopic surgery, performed in accordance with initial indications, a one-time repeat submucosal dissection procedure is acceptable.

Consensus regarding multimodal therapy

1. Combination therapy utilizing an MDT should be considered in the case of advanced gastric cancer (>cT1b).
2. Perioperative chemotherapy should be considered in each case of potentially resectable gastric cancer stage cT2, any

Table IV. Indications for the endoscopic treatment of gastric cancer according to JGCA

	Basic indications	Extended indications
EMR/ESD	highly differentiated adenocarcinoma: • no ulceration (UL0) • stage cT1a • tumor size ≤2 cm	
ESD	highly differentiated adenocarcinoma without ulceration (UL0): • stage cT1a, • tumor size >2 cm	**low-differentiated adenocarcinoma without ulceration (UL0):** • **CT1a advancement,** • **tumor size ≤2 cm**
	highly differentiated adenocarcinoma with ulceration (UL1): • **stage cT1a,** • **tumor size ≤3 cm**	

*Bold areas were not included into consensus

Table V. Endoscopic curability classification

Category	Description
eCura A	neoplasm without ulceration (UL0) meeting all of the following conditions: • complete resection (*en bloc*), • any neoplasm size, • predominantly a highly differentiated neoplasm, • pT1a, • negative horizontal and vertical margins, • no vascular infiltration (L0V0)
	ulcerative neoplasm (UL1) meeting all the following conditions: • complete resection (*en bloc*), • neoplasm size ≤3 cm, • predominantly highly differentiated neoplasm, • pT1a, • negative horizontal and vertical margins, • no vascular infiltration (L0V0)
eCura B	predominantly poorly differentiated neoplasm meeting all of the following conditions: • no ulceration (UL0), • complete resection (*en bloc*), • neoplasm size ≤2 cm, • pT1a, • negative horizontal and vertical margins, • no vascular infiltration (L0V0)
	for pT1b cancer meeting all of the following conditions: • complete resection of neoplasm (*en bloc*), • predominantly highly differentiated neoplasm, • neoplasm size ≤3 cm, • SM1 – submucosa infiltration <500 µm from muscularis mucosae, • • negative horizontal and vertical margins, • • no vascular infiltration (L0V0)
eCura C	endoscopic resections that do not meet the criteria for eCura A or eCura B
	eCura C1: • highly differentiated tumor meeting eCura A or eCura B criteria but not completely removed (*en bloc*) or removed with a positive horizontal margin eCura C2: • all other eCura C resections

N, M0, where an R0 resection margin is deemed possible, and there are no indications for urgent gastrectomy.

3. Perioperative FLOT chemotherapy should be considered in patients determined to be in very good general health following an extensive clinical evaluation.

Comment

The assumption is a 4+4 regimen, however in some patients, it may not be possible to complete all cycles before or after surgery.

4. Perioperative FOLFOX/XELOX chemotherapy should be considered in patients determined to be in good to moderate overall health.

Comment

This statement is supported by moderate evidence; however, this strategy increases the group of patients receiving perioperative chemotherapy.

5. Postoperative radiotherapy has not been shown to provide additional benefits in patients who received perioperative chemotherapy.
6. In patients with stage 1B or higher gastric cancer who did not receive perioperative chemotherapy, adjuvant radiochemotherapy, or less commonly, self-administered chemotherapy, is recommended.
7. In patients with stage 1B or higher gastric cancer where a D2 lymphadenectomy was not performed, adjuvant radiochemotherapy is recommended.
8. In patients with gastric cancer not exceeding stage pT2N0 where a D2 lymphadenectomy was performed, adjuvant chemotherapy may be considered, although observation is also possible.

Comment

This provision applies to patients who did not receive perioperative chemotherapy.

9. In patients with advanced, locally unresectable tumors and no evidence of distant metastasis (T4b, any N, M0), inductive chemotherapy should be considered. After its completion, it is recommended to reassess the feasibility of surgical resection.
10. In patients with advanced, unresectable gastric cancer, chemotherapy regimens should consist of a combination of two or three agents, including platinum and fluoropyrimidine derivatives.
11. Hyperthermic intraperitoneal chemotherapy (HIPEC) is acceptable in select cases of stage IV gastric cancer, preferably as part of clinical trials.
12. In patients with advanced, unresectable gastric cancer with positive HER2 expression, systemic therapy including trastuzumab in combination with a platinum derivative and a fluoropyrimidine is recommended.

Abbreviations

CT – computed tomography
EGJ – esophageal-gastric junction
EMR – endoscopic mucosal resection
ESD – endoscopic submucosal dissection
EUS – endoscopic ultrasonography
HIPEC – hyperthermic intraperitoneal chemotherapy
JGCA – Japanese Gastric Cancer Association
MDT – multidisciplinary team
MSI – microsatellite instability
PD-L1 – programmed death ligand 1
PET-CT – positron emission tomography
UL0 – no ulceration

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