



Value of multidisciplinary collaboration in acute and chronic pancreatitis

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Abstract

Multidisciplinary collaboration (MDC) has been widely adopted in healthcare to optimize patient care. MDC brings several specialized healthcare providers to the table using several methods, including multidisciplinary meetings (MDMs), multidisciplinary clinics, teleconferences, and online multidisciplinary expert panels, to reach the goal of achieving the best diagnosis and treatment plan for complex diseases. Diagnosis and management of acute/chronic pancreatitis is complex which necessitates the development and utilization of MDC. The key members of pancreatitis MDM include gastroenterologists, radiologists, pathologists, hepatobiliary surgeons, chairperson, and a coordinator. After selection of admitted or referred patients, the availability of required information is reviewed, and then each case is discussed. The final diagnosis and treatment plan is confirmed by consensus, especially for complex cases that require endoscopic intervention or pancreatectomy and patients with the possibility of pancreatic adenocarcinoma. It has been shown that MDMs have improved the clinical outcome of patients with acute/chronic pancreatitis. In addition to MDM, the feasibility of multidisciplinary clinics, teleconferences, and online multidisciplinary expert panels for the management of pancreatic disorders has been investigated. Understanding structure, potential advantages, and limitations of MDC will help clinicians and healthcare systems in developing an optimized MDC to improve the management of acute/chronic pancreatitis. This narrative review summarized prior recommendations and explored the impact of MDC on clinical outcomes of patients with pancreatitis. Our recommendations offer a generalizable method that can be utilized by healthcare systems.

Keywords Interdisciplinary research · Interdisciplinary studies · Pancreas · Pancreatitis · Disease management · Diagnosis

Introduction

Multidisciplinary collaboration (MDC) has been intended in modern healthcare systems to optimize patient care and has become a requirement for the diagnosis and management of various diseases [1–3]. In the era of personalized medicine, challenges in diagnosis and complexity of treatment strategies necessitate an MDC to achieve an accurate diagnosis and tailor patient care pathways [3, 4]. In addition, a large body of evidence demonstrated that poor interpersonal

communication between healthcare providers accounts for ~80% of healthcare errors [5]. As such, building an MDC team is strongly advocated for complex diseases which can minimize errors and result in improved patient care [2, 3, 6].

An MDC team consists of several specialists from different disciplines working together to discuss specific diseases [6]. Several methods are utilized to achieve a proper MDC, including multidisciplinary meetings (MDMs), multidisciplinary clinics, teleconferences, and online multidisciplinary expert panels [3]; among these methods, MDM is the most popular approach and the importance of MDMs in the diagnosis and management of breast cancer [7], hepatocellular carcinoma [8], gastrointestinal malignancies [4], and pancreatic adenocarcinoma [9, 10] has been highlighted by a number of researches. Despite prior reports evaluating the importance of MDC for cancer patients, little research exists to determine the role of MDC in the management of patients with acute/chronic pancreatitis [2, 11–14].

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Acute and chronic pancreatitis have been considered as the leading cause of hospitalization in many countries with the admission rate of 12–19 and 5–9 per 100,000 person-years, respectively [15, 16]. Given the high heterogeneity of pancreatitis and associated complications (such as infected necrosis), it has become more evident that the diagnosis and management of pancreatitis requires a collaborative effort between multiple disciplines [2, 17, 18]. Therefore, an MDC between radiologists, pathologists, gastroenterologists, and surgeons can help devise treatment strategies based on evidence and consensus-based guidelines and facilitate collaborative research [16, 19–23]. In this regard, the UK National Confidential Enquiry into Patient Outcome and Death (NCE-POD) performed a nationwide survey on the quality of care provided to patients with acute pancreatitis [24]. Authors noted that only 45% of admitted patients received “good practice,” and the main causes of malpractice were listed as receiving inappropriate antibiotic prophylaxis (i.e., lack of gastroenterologists consultant) and not performing cholecystectomy in gallstone-induced pancreatitis (i.e., lack of radiologists or surgeons consultants). The NCEPOD study highlighted the importance of MDC in minimizing errors and enhancing the quality of care [24]. Furthermore, the expert opinion provided by physicians can significantly improve patient care. For instance, a recent study by Ching-koe et al. has shown that imaging reinterpretation by expert radiologists during pancreas MDMs leads to a change in management of up to 38.5% of patients [11].

The purpose of this narrative review is to summarize the literature regarding the potential impact of MDC on clinical outcomes of patients with acute/chronic pancreatitis. First, we describe how an MDM could be organized. Second, we assess whether there is scientific evidence that MDM influences the clinical outcome of pancreatitis patients. Third, limitations of MDM and future directions are discussed.

Pancreatitis MDM: Organization of the meeting

Although the detailed organization of MDMs has been elaborated for pancreatic cancer and other malignancies, only a few studies focused on acute/chronic pancreatitis. By summarizing previous recommendations, we aimed to suggest an appropriate MDM organization for acute/chronic pancreatitis. Figure 1 summarizes all steps of pancreatitis MDM.

MDM members

Multidisciplinary team members can be stratified to three levels based on the level of involvement, including “core,”

“allied,” and “expert support” members. The “core” and “allied” members (also known as key participants) include gastroenterologists, radiologists, pathologists (on occasion), hepatobiliary surgeons, primary treating physicians, chairperson (usually a senior member), and coordinator (usually a clinical nurse) [2, 13, 25, 26].

The total number of attended specialists may vary from 5 to 30 depends on the size of the medical center, number of admitted/referred patients, and available specialists [2, 3, 11, 13, 27]. It has been suggested that the involvement of more team members is not associated with more efficient decision-making and only results in prolonged meeting times [2, 28]. Diagnostic and interventional radiologists are considered to be one of the most important contributors as imaging has a critical impact on decision-making and finalizing treatment approaches. Kane et al. analyzed the work associated with preparation for or participating in all MDMs and showed that radiologists spend approximately 20% of their time on MDMs [29]. Although the primary/referring physicians do not routinely attend MDMs, it has been shown that the presence of main treating physician has a considerable impact on the meeting outcome and significantly increases the probability of a correct diagnosis by 20% [28, 30]. Furthermore, the primary physician is most likely to know patients’ wishes and may help in individualizing treatment plans. The importance of chairperson and coordinator in ensuring the proper functioning of MDMs has also been documented (specific role of members is discussed in the next sections) [3, 6]. The “support members” include nutritionists, pharmacists, psychologists, and social workers who may not directly be involved in the decision-making process but may have a critical role in the quality of patient care [3]. Furthermore, MDMs have been considered as a part of the radiology training curriculum and postgraduate trainees have an essential role in meeting preparation, case presentation, and case discussion [31–33]. Trainees can learn and develop clinical skills from case discussions while attending MDMs. A survey study on 1222 UK radiology trainees who were participating in MDMs showed that most of the trainees spent adequate time for meeting preparation and they acquired notable skills [33]. However, only 22% of trainees had previous training on how to prepare/run an MDM, and 10% of them did not feel comfortable to lead a meeting [33]. Another online survey study showed that the significant proportion of radiology trainees felt included in the medical team by participating in MDMs and trainees provided consistent positive feedback about the educational values of meetings [34]. Therefore, it can be concluded that trainees have the potentials to run MDMs; however, they should not be asked to lead a meeting without adequate training and support.

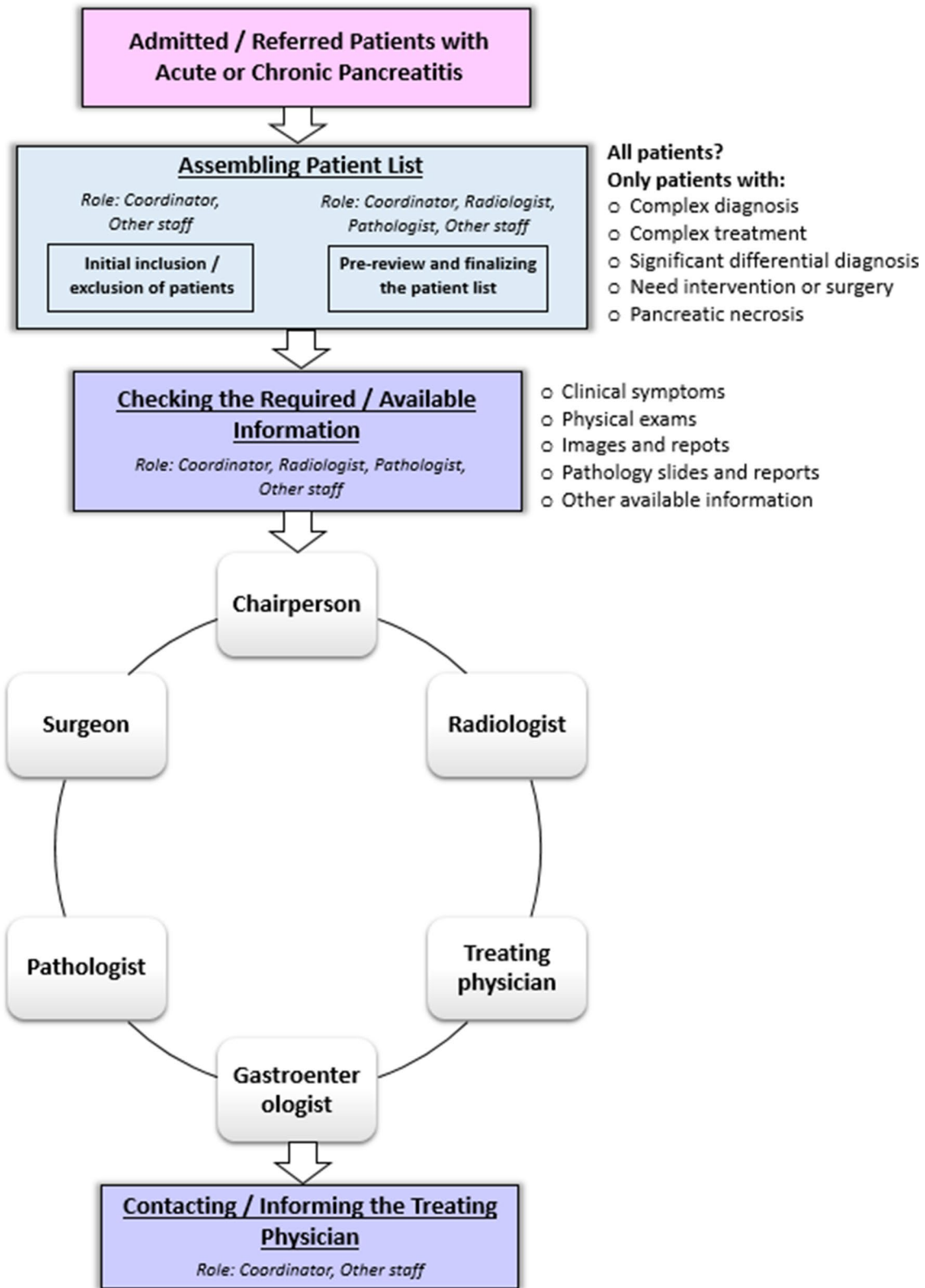


Fig. 1 Steps of pancreatitis multidisciplinary meeting (MDM): pre-MDM actions including assembling patients’ list and acquisition of all required information, MDM structure, and MDM participants

Pre-MDM responsibilities

MDM organization responsibilities consist of pre-meeting actions including (i) assembling patients' list and (ii) ensuring acquisition of all required information.

Preparing patients' list

There is no consensus guideline on which patients to be discussed in pancreatitis MDMs. It is unclear whether all high-risk patients which clinical suspicion of acute/chronic pancreatitis or only a subgroup of patients with unclear diagnosis and/or treatment plan should be discussed. A study by Brauer et al. showed that discussion of all new or existing inpatients/outpatient cases with benign and malignant pancreatic conditions requires significant cost and time expenditure and may not impact outcomes [12]. Studies have highlighted the importance of MDMs for pancreatic necrosis [13, 14], as the management is challenging and needs a collaborative effort between gastroenterologists and surgeons [13, 35]. High-risk patients with recurrent acute pancreatitis without clear etiology should be weighed in for further workup and etiology assessment. For patients with a single episode of acute pancreatitis, the final management decision is usually reached by a simple review of medical records and these patients are not routinely discussed over MDMs; however, at some institutions, these patients are discussed for better assessment of different treatment options such as cholecystectomy, endoscopic retrograde cholangio-pancreatography (ERCP), or endoscopic sphincterotomy [12, 36]. Furthermore, patients with suspicion for an underlying malignancy in the setting of both acute and chronic pancreatitis should be discussed to devise further/follow-up imaging or tissue diagnosis strategies.

MDMs are time-consuming and discussion time for each case ranged from 4 to 6 min, depends on the quality of available information and the complexity of case [28]. Therefore, it was suggested to pre-discuss all referred cases prior to meetings, especially by radiologists and pathologists, with an aim to limit the total number of patients' list [2, 29]. Some studies also recommended classifying cases according to the complexity of disease before meetings (e.g., general, moderate, and complex) which may enhance the functioning of MDMs [27]. In addition, we recommend putting a cap on number of cases that are discussed and having all cases submitted at least a few days before the meeting for proper preparation of MDM.

Collecting required data

After finalizing patients' list, the coordinator is responsible for reviewing all required and obtained medical records, cross-sectional imaging and reports, pathology slides (when

applicable), and other relevant clinical information for each case [3, 37, 38]. All images and pathology slides are submitted to radiologists and pathologists for preview [2]. In the case of inadequate imaging studies or poor imaging quality, it has been recommended to repeat examinations to have all needed information at the time of the meeting. A summary of the general information required for pancreatitis MDMs is provided in Table 1 [18, 39–41] and may vary. However, a detailed discussion about the diagnostic algorithm and treatment approaches is beyond the scope of this article. Poor quality or lack of required materials have been considered as one of the leading causes of delayed decision-making. In this regard, the use of an intelligent spreadsheet/checklist that automatically extracts relevant data from the medical records is proposed [27]. We suggest that every MDM should follow a standard template to capture all important information (as presented in Table 1) in a structured manner to improve the efficiency of the meeting.

MDM structure

To optimize the functioning of MDMs, it is essential to follow a structured communication and use focused leadership [6, 25, 26, 42–44]. The chairperson leads MDM to ensure a good focus on each reviewed patient. MDM consists of four parts including presentation of relevant clinical information and results of radiological/laboratory/pathology-investigations, discussion of findings, recommendation for diagnosis and/or management, and next steps to be performed [6, 25, 26, 42–44]. For case presentation, main clinical findings are verbally presented in a narrative style. It has been recommended to present minimal information at first and reveal more information as required. After presenting and summarizing main findings, the radiologist is asked to review images and discuss important imaging features. Old images are also reviewed (if available and necessary), and imaging findings are discussed to seek more data. It has been suggested that image reassessment during MDMs may lead to a critical change in the final diagnosis (described in the next sections) [45]. Therefore, we recommend that radiologists read the initial report(s) before or during the MDMs. In the case of any discrepancy between the initial and second radiology reports, findings should be discussed and discrepancy should be resolved by consensus and the secondary findings/impressions on the radiology report to be uploaded on the patient's records. Moreover, participation of more radiologists gives an opportunity to provide different views from an imaging point of view; the same also applies to other specialties. Next, the pathologists review histopathological slices (if available and necessary) and highlight main findings. All participants are encouraged to be involved in the discussion, resolving inconsistencies, and reviewing findings to reduce the possibility of wrong assessment to reach

Table 1 List of required information for acute/chronic pancreatitis multidisciplinary meetings (MDMs), role of meeting participants, most important differential diagnoses, and treatment plans. *Main required information. *MDM* multidisciplinary meeting, *AIP* autoimmune pancreatitis, *PDAC* pancreatic ductal adenocarcinoma

	Acute pancreatitis	Chronic pancreatitis
Pre-MDM: Required data		
Role of coordinator: Collecting data	<ul style="list-style-type: none"> • Clinical information (e.g., abdominal pain, nausea, vomiting, alcohol abuse, etc.)*, prior history of pancreatitis (recurrent episodes) • Main information: Serum amylase and lipase, liver function tests, other lab tests, abdominal plain radiograph, CT scan, and radiology report* • Other information: US, MRI, MRCP, EUS, ERCP 	<ul style="list-style-type: none"> • Clinical information (e.g., abdominal pain, malabsorption, weight loss, alcohol abuse, diabetes, etc.)* • Main information: Abdominal plain radiograph, CT scan, and radiology report* • Other information: MRI, MRCP, ERCP, EUS, US,
MDM: Challenges in diagnosis	Biopsy and histological studies	Biopsy and histological studies
Role of radiologists	<ul style="list-style-type: none"> • Grade of acute pancreatitis and % of necrosis (> vs. ≤30%), presence of gallstone/sludge • Assess complications including interstitial edematous pancreatitis, necrotizing pancreatitis, acute peri-pancreatic fluid collection, pancreatic pseudocyst, acute necrotic collections, and walled-off necrosis, hemorrhagic pancreatitis • Mass (rule out PDAC) • The abdominal or interventional radiologists: comment on percutaneous intervention • Assess histological slides 	<ul style="list-style-type: none"> • Large-duct disease vs. small duct disease • Mass (rule out PDAC), cysts or pseudocysts, stone, ductal stricture • Underlying PDAC • Abdominal or interventional radiologists: comment on percutaneous intervention <p><i>For AIP: Differentiation of AIP from PDAC, ductal and parenchymal assessment (level 1 or 2)</i></p>
Role of pathologists	• Assess histological slides	• Assess histological slides
MDM: Main differential diagnoses	• PDAC, acute on chronic pancreatitis, or Acute recurrent pancreatitis	• PDAC or AIP <i>For AIP: PDAC or lymphoma (evaluate the ductal pattern and image enhancement)</i>
MDM: Challenges in treatment		
Role of gastroenterologist, treating physician, support staff	<p>Define conservative treatment:</p> <ul style="list-style-type: none"> Pain management Fluid therapy Dietary assessment Antibiotics if indicated Alcohol avoidance 	<p>Define conservative treatment:</p> <ul style="list-style-type: none"> Pain management Alcohol avoidance Dietary assessment Pancreatic enzyme treatment Steroid therapy Manage comorbidities (e.g., diabetes)
Role of interventional gastroenterologists	<p>Endoscopic intervention:</p> <ul style="list-style-type: none"> ERCP Percutaneous drainage of collection 	<p>Endoscopic intervention:</p> <ul style="list-style-type: none"> Extracorporeal shockwave lithotripsy Pancreatic sphincterotomy Dilation and stenting of strictures Drainage of pseudocyst Removal of stones

Table 1 (continued)

Role of surgeons	Acute pancreatitis	Chronic pancreatitis
	<p>Surgeries:</p> <ul style="list-style-type: none"> Cholecystectomy Table cholangiogram Bile duct exploration Percutaneous drainage of collection Pancreatectomy 	<p>Surgeries:</p> <ul style="list-style-type: none"> Lateral pancreaticojejunostomy Cystenterostomy Distal/total pancreatectomy Pancreaticoduodenectomy Beger procedure Frey procedure Islet autotransplantation Whipple procedure

a diagnosis and consensus on next steps in management. Appropriate decision is defined and uploaded on medical records. After meeting, the coordinator contacts the primary physician (if not present at the meeting) to ensure agreed decisions are being actioned. It has been shown that 10–15% of clinicians do not follow MDMs recommendations, which limit the effectiveness of MDMs [46, 47]. The main reasons for these non-adherences have been listed as lack of proper contact with the primary physician and inadequate consideration of patient comorbidities and preference [46, 47].

Number of MDMs can vary from monthly to weekly (routinely one to two meetings per week) depending on the number of admissions or referrals. Considering the fact that many institutions have an established pancreaticobiliary, pancreatic cancer, or gastrointestinal MDMs, it could be a feasible option to discuss acute/chronic pancreatitis pertinent cases during these meetings rather than having a separate MDM. This alternate option could save time and cost, if there are no available additional time slots to support MDM specific to acute/chronic pancreatitis.

Role of meeting participants

Specific role(s) of each attended specialist are listed in Table 1.

Acute pancreatitis

Acute pancreatitis is usually diagnosed based on clinical symptoms, physical examinations, and laboratory and imaging studies. Images are assessed by radiologists to define the leading causes of acute pancreatitis (e.g., presence of gallstone/sludge), disease grade and percentage of necrosis (> 30% vs. ≤ 30%), complications such as interstitial acute peri-pancreatic fluid collection, and rule out other diagnoses (especially in older patients with unexplainable acute pancreatitis) [18, 41, 48, 49]. Acute pancreatitis can be the first presentation of pancreatic adenocarcinoma; it has been shown that ~ 1% of all patients with the first episode of acute pancreatitis (with the median age of 58 years) develop pancreatic adenocarcinoma over 5-years [50]. Endoscopic or imaging-based interventions or surgery are indicated in the case of biliary obstruction, cholangitis, presence of gallstones, infected necrosis, and pseudocysts and/or necrosis.

Chronic pancreatitis

The diagnosis is routinely made based on the clinical presentation and CT findings; however, in some cases, additional imaging (e.g., MRI, MRCP), laboratory test (e.g., genetic testing for chronic pancreatitis), and biopsy are performed. Radiologists have a significant role in the assessment of images to detect masses, cysts, pseudocysts, ductal stricture

or stone, define large/small duct disease, and rule out other diagnoses. Differentiating pancreatic adenocarcinoma from mass forming chronic pancreatitis and focal autoimmune pancreatitis (AIP) can sometimes be challenging [51–55]. About 5–10% of patients who undergo Whipple surgery due to a suspicion of pancreatic ductal adenocarcinoma (PDAC) cancer ultimately have a benign disease such as chronic pancreatitis or AIP [56–58]. Radiological features, including abrupt termination of pancreatic duct and ductal dilation, can be used to distinguish cancer from pancreatitis [51, 52]. Moreover, other modalities including MRI (especially DWI sequence), MRCP, PET, and EUS, serum immunoglobulin (Ig) G4 level, and clinical response to steroids can be utilized to avoid interpretation errors [51, 52, 59–61]. In this regard, Chingkoe et al. showed that the majority of imaging interpretation errors of pancreatitis were attributed to misinterpretation of focal ductal dilation, peri-pancreatic soft tissue stranding, and differentiating of PDAC from focal pancreatitis [11]. On occasion, tissue sampling may be required to exclude PDAC with the help of EUS-FNA. The abdominal or interventional radiologists are able to comment on percutaneous intervention aspects as needed in particular cases, especially patients with complicated pancreatitis who have drains for a long period of time or patients who required tissue sampling. Endoscopic interventions may be warranted in the case of ductal stones or stricture as well as symptomatic pseudocysts or walled-off necrosis which require the services of interventional gastroenterologists [17, 40]. Surgery may be needed for PDAC or chronic pancreatitis [17, 40, 62, 63].

Impact of MDM on changing diagnosis/treatment

Published literature supported the idea that MDC and MDM can improve the management of pancreatitis and pancreatic cancer [64]. Chingkoe et al. assessed the impact of MDMs on changing management of pancreatic disorders [11]. The total number of 252 patients, including 52 patients with acute/chronic pancreatitis, was included and abdominal CT scans and MRIs were reassessed [11]. Authors showed that MDMs changed the imaging interpretation of 33.7% cases (moderate or significant change)—23.5% of which had acute/chronic pancreatitis [11]. MDMs also changed the overall diagnosis of 8.7% and treatment of 17.9% cases [11]. Patients in which MDMs resulted in a change in the diagnosis/treatment were analyzed in a study on 470 patients, including 33 patients with pancreatitis [12]. Authors showed that 7 out of 33 patients with pancreatitis (21.2%) had a change in treatment plans after MDMs [12]. Gerritsen et al. assessed the impact of image reassessment on the diagnosis of pancreatic masses by studying 344 subjects, including 61

patients with chronic pancreatitis or AIP [45]. They showed a fair interobserver agreement ($\kappa=0.32$) between the expert consensus and original CT report, and the final diagnosis is changed in up to 33% patients after image reassessment [45]. The major causes of these disagreements were attributed to ampullary lesions, cystic lesions, focal steatosis, and the presence of biliary stent [45]. Dickerson et al. highlighted the role of MDMs in distinguishing AIP from pancreatic cancer by evaluating AIP patients who underwent surgical resection for suspected malignancy [65]. After surgery, concurrent malignancy was only detected in 11.1% of AIP patients; nearly all AIP patients with confirmed malignancy had double duct sign and solid lesions [65].

In addition, several studies assessed the accuracy of MDMs in the diagnosis and management of pancreatic cancer and cystic pancreatic lesions [64]. Rao et al. compared the clinical outcomes of patients managed using MDM versus non-MDM [10]. They showed that patients managed using MDM had a shorter time from diagnosis to surgery [10]. The overall accuracy of MDM in the diagnosis of cystic pancreatic lesions was reported ~70%—the level of accuracy is associated with the mucinous nature of lesions, location of cysts, and utilized imaging methods [66, 67]. A systematic review of studies assessing the impact of MDMs on clinical outcomes of patients with gastrointestinal malignancies reported a change in diagnosis of 18–30% patients, and a change in the treatment of 23–42% patients after MDMs [4].

Limitations of MDMs

Despite promising results about the benefits of MDMs in the management of pancreatitis, the utility of MDMs is subject of debate and some limitations exist that should be addressed by future studies. First, only a few studies evaluated MDM of pancreatitis, and more structured studies focusing on pancreatitis MDMs should be performed. Second, some studies reported that MDMs have no significant impact on the clinical outcomes of patients [68, 69], and the effect of MDC on overall survival is yet to be investigated. Third, a significant proportion of primary physicians do not follow MDM recommendations [46, 47]. Efficient strategies should be developed to minimize the rate of MDM non-adherence. Fourth, MDMs cost \$105 to \$190 per case reviewed (i.e., cost of physician time per each case reviewed), which may not be cost-effective [12, 70, 71]. Appropriate MDM inclusion/exclusion criteria should be developed to minimize unnecessary costs, and further cost-effectiveness analyses should be performed. Fifth, MDMs usually conducted on a weekly basis, which is not feasible to discuss urgent cases. Sixth, a significant proportion of patients with pancreatitis are admitted to small hospitals without full-time specialized

healthcare providers, and the concept of MDC is not feasible in these small centers [14, 24]. In this regard, the NCEPOD survey showed that 40% of patients with acute pancreatitis were admitted to small hospitals without the availability of MDC [24]. Several methods including centralization of pancreatitis care in high volume centers, multidisciplinary clinics, teleconferences, and online nationwide multidisciplinary expert panels have been developed to address these issues (discussed in the next section) [6, 29, 72].

Future directions

Multidisciplinary clinics

Some tertiary medical centers utilized multidisciplinary clinics for better assessment of complex diseases [73, 74]. Comparing MDMs, multidisciplinary clinics have the same participants with the advantage of visiting patients, performing history and physical exams, and considering patient comorbidities and desires. In a study reviewing the medical records of 203 patients with pancreatic cancer in a multidisciplinary clinic, re-evaluation of images resulted in 18.7% change in the stage of cancer, and an overall 24% change in the management [75]. In Van Hagen et al. study, utilizing multidisciplinary clinic resulted in a 34.5% change in the management of patients with gastrointestinal malignancies [76]. More studies need to be performed to evaluate the beneficial impact of multidisciplinary clinics in the management of pancreatitis.

Online multidisciplinary teleconference

Online teleconferences can be easily utilized to conduct a web-based MDM [6, 77]. High demands for more MDMs are attributed to developments of teleconferences, which can facilitate the performance of MDC and extend the multidisciplinary team to a wider geographic area [6, 77]. However, some technical limitations exist regarding the use of teleconferences. For instance, there is a considerable difference in the duration of case discussion using teleconference when compared with co-located MDMs (147% longer time per each case) [6, 77]. The efficacy of pancreatitis multidisciplinary teleconferences has yet to be studied.

Online nationwide multidisciplinary expert panel

The Dutch Pancreatitis Study Group (DPSG) introduced a novel 24/7 online nationwide multidisciplinary expert panel (available 365 days) for clinicians treating necrotizing pancreatitis [72]. Their expert panel included four radiologists, four gastroenterologists, and seven surgeons [72]. In this program, primary physician can fill out an online request

form to provide required clinical information, images, laboratory tests, etc. The expert panel reviews all findings and returns the advice within 24 h. The DPSG nationwide multidisciplinary expert panel is one of the first attempts in developing nationwide MDC and further research is required.

Conclusion

MDC could be considered as the best practical approach for the management of patients with acute/chronic pancreatitis, especially at tertiary care centers and developed healthcare systems. Considering the heterogeneity of pancreatitis, proper diagnosis and management require a proper interaction between radiology, pathology, gastroenterology, and surgery specialists. Critical differential diagnoses such as PDAC as well as a broad spectrum of available treatment plans necessitate the utilization of pancreatitis MDC. Further research focusing on pancreatitis MDM, teleconferences, and nationwide expert panels need to be performed. Furthermore, it is yet to be determined whether the benefits of pancreatitis MDMs outweigh the costs and disadvantages of meetings.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no relevant conflict of interest.

Ethical approval All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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