

Clinical Perspectives in Pancreatology: Compliance with Acute Pancreatitis Guidelines in Germany

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Within the last decade, no fewer than eight guidelines for the management of acute pancreatitis have been published [1–8]. When individual guidelines are compared, marked similarities emerge and significant differences are uncommon (table 1) [9]. It is, however, unknown whether these guidelines are accepted by physicians and used in clinical practice. We have determined whether and to what extent German gastroenterologists comply with published guidelines for acute pancreatitis.

A questionnaire concerning the ten main issues of the eight guidelines (table 1) was sent to the 190 members of the *Arbeitsgemeinschaft Leitender Gastroenterologischer Krankenhausärzte* (ALGK). Members of this professional association are all board-certified gastroenterologists and are either in charge of a gastroenterology division, are within a department of medicine or heads of a department of gastroenterology and hepatology. At their respective institutions, they have ultimate responsibility for the diagnosis and treatment of patients with acute pancreatitis. The answers to the questionnaire were evaluated against the published guidelines of the eight consensus conferences.

Mailed surveys are a useful tool for examining attitudes and behavior in health-care settings, but in order to be successful and avoid bias, they require a high response rate. Published surveys of physicians show

a mean response rate of only 54% [10]. In our survey, 182 of the 190 gastroenterologists replied and had completed the questionnaire, resulting in a response rate of 96% and excluding any non-respondent bias.

The knowledge and awareness of the content of international consensus guideline recommendations for the diagnosis and/or treatment of acute pancreatitis varied. Not surprisingly, almost all German gastroenterologists were aware of the guideline recommendations of the German (DGVS) Consensus Conference [5]. About 50% knew of the content of the guidelines provided by the Atlanta Symposium [1], the British Society of Gastroenterology [2], and the World Congress of Gastroenterology [6], whereas more than two thirds were unaware of other international guidelines (table 2).

Table 1 illustrates to what extent 10 key recommendations regarding acute pancreatitis were complied with in Germany. To determine the severity of the disease, German gastroenterologists tended to prefer imaging procedures, such as ultrasound and computed tomography, rather than multi-factor-scoring systems. Since the validity of ultrasound examinations has never been demonstrated for assessing the severity of acute pancreatitis, this preference may be driven by compliance with insurance reimbursement plans or clinical training cur-

ricula, rather than guideline recommendations. Without exception, all interviewed gastroenterologists used C-reactive protein (CRP) as an indicator for pancreatic necrosis and to determine the severity of acute pancreatitis.

Contrast-enhanced computed tomography (CECT), performed within 72 h after admission, can differentiate between interstitial and necrotizing pancreatitis and during the course of the disease the extent of organ damage on admission will deteriorate in only a few patients. Despite of this, only half of the German gastroenterologists resorted to CECT to determine the disease severity of acute pancreatitis on admission. The other 50% of respondents will order a CECT only when the patient's condition does not improve clinically or when sepsis or infected necrosis is suspected.

It is still undecided what role prophylactic antibiotics have in the treatment of necrotizing pancreatitis and this is reflected in our results, according to which only half of German gastroenterologists use antibiotics to prevent infected pancreatic necrosis.

When cholangitis and jaundice are present, most colleagues (86 and 81%, respectively) perform endoscopic sphincterotomy for biliary pancreatitis in accordance with published guidelines.

The timing of a cholecystectomy for biliary pancreatitis is still being debated, but some evidence suggests that an operation

Table 1. Compliance with published acute pancreatitis guidelines in Germany (modified from Bradley [9])

Guidelines	Atlanta ¹ (1992)	BSG ² (1998)	SSAT ³ (1998)	Santorini ⁴ (1999)	DGVS ⁵ (2000)	WCG ⁶ (2002)	JSAEM ⁷ (2002)	IAP ⁸ (2002)	This study (2004)*	%
1 Stratification of severity	APACHE II CRP CECT	APACHE II CRP CECT	NS	APACHE II	CRP Creatinine apO ₂	APACHE II	APACHE II CRP	NS	APACHE II CRP US/CECT	32 100 97/91
2 CECT	severe AP	severe AP	NS	severe AP	severe AP	severe AP	severe AP	NS	severe AP	53
3 Prophylactic antibiotics	necrotizing pancreatitis	necrotizing pancreatitis	necrotizing pancreatitis	necrotizing pancreatitis	necrotizing and/or severe pancreatitis	necrotizing pancreatitis	necrotizing pancreatitis	necrotizing pancreatitis	necrotizing pancreatitis	47
4 Endoscopic sphincterotomy for biliary pancreatitis	cholangitis jaundice	cholangitis jaundice severe AP	cholangitis	cholangitis jaundice severe AP	biliary obstruction plus cholangitis	cholangitis jaundice severe AP	cholangitis jaundice severe AP	cholangitis jaundice	cholangitis jaundice severe AP	86 81 43
5 Timing of cholecystectomy for biliary pancreatitis	same hospital admission	2–4 weeks	same hospital admission	NS	NS	same hospital admission	NS	same hospital admission	same hospital admission	23
6 Surgical therapy for sterile necrotizing pancreatitis	rarely	NS	NS	rarely	NS	rarely	rarely	rarely	no	82
7 FNA to identify infected pancreatic necrosis	yes	NS	NS	yes	yes	yes	yes	yes	yes	66
8 Enteral nutrition	NS	NS	NS	yes	NS	yes	yes	yes	yes	73
9 Efficacy of antiproteases	NS	NS	NS	no	NS	no	yes	NS	no	97
10 Specialty centers for severe pancreatitis	yes	yes	yes	yes	NS	yes	yes	NS	yes	41

¹ Atlanta Symposium [1]; ² BSG British Society of Gastroenterology [2]; ³ SSAT Society for Surgery of the Alimentary Tract [3]; ⁴ Santorini Consensus Conference [4]; ⁵ DGVS Deutsche Gesellschaft für Verdauungs- und Stoffwechselkrankheiten [5]; ⁶ WCG World Congress of Gastroenterology [6]; ⁷ JSAEM Japanese Society of Abdominal Emergency Medicine [7]; ⁸ IAP International Association of Pancreatology [8].

AP = Acute pancreatitis; apO₂ = arterial pO₂; CECT = contrast-enhanced computed tomography; CRP = C-reactive protein; FNA = fine-needle aspiration; NS = not stated; US = ultrasound.

* Details of this study have appeared in German in *Deutsche Medizinische Wochenschrift* 130, 1627–1632, 2005.

Table 2. German gastroenterologists awareness of published consensus guidelines for the diagnosis and/or treatment of acute pancreatitis

	%
Atlanta Symposium 1992 [1]	53
British Society of Gastroenterology 1998 [2]	40
Society for Surgery of the Alimentary Tract 1998 [3]	14
Santorini Consensus Conference 1999 [4]	20
German Consensus Conference 2000 [5]	92
World Congress of Gastroenterology 2002 [6]	49
Japanese Society of Abdominal Emergency Medicine 2002 [7]	6
International Association of Pancreatology 2002 [8]	31

should be performed during the same hospital admission. However, only 23% of German gastroenterologists can comply with this policy. This could be due to the fact that surgeons are still reluctant to operate during an acute attack of cholecystitis and that budgetary restraints and changing reimbursement plans may require an early discharge and delayed readmission to a surgical unit.

Most gastroenterologists agree with the statement that surgical therapy for sterile necrotizing pancreatitis is rarely necessary. Two-thirds of gastroenterologists use fine-needle aspiration to identify infected pancreatic necrosis, whereas the remaining third use clinical criteria to diagnose infection.

Already three out of four gastroenterologists use enteral, rather than parenteral, nutrition for patients with acute pancreatitis. Although this is a guideline recommendation, it is based on very recent clinical studies and represents a paradigm shift. We would not have expected this to be accepted so readily and used so quickly in general clinical practice.

Antiproteases are no longer used in Germany, in agreement with the results of the Santorini Consensus Conference [4] and the World Congress of Gastroenterology [6], but this is contrary to the guidelines published by the Japanese Society of Abdominal Emergency Medicine [7].

In two previous mail surveys on the compliance with pancreatitis guidelines [11, 12] the response rates were 50% and 38%, respectively, and most doctors chose clinical assessment, CRP and prognostic parameters (Ranson, Imrie, APACHE II) for assessing the severity of acute pancreatitis rather than CECT. Two thirds of respondents, however, used CECT in patients with predicted severe acute pancreatitis. Ultrasound was not used to assess severity and this striking difference to our respondents may be due to the fact that ultrasound equipment is widely available in German

medical and gastroenterological departments and that physicians, rather than radiologists, perform the procedure. Two further studies from England showed a non-compliance with the British Society of Gastroenterology guidelines [2] with regard to severity stratification within 48 h, treatment of gallstones within 4 weeks, the availability of high dependency or intensive care units, CECT in severe cases within 10 days and urgent ERCP in severe gallstone disease [13, 14].

In summary, German gastroenterologists are generally well-informed about, and largely comply with, guidelines for the diagnosis and treatment of acute pancreatitis. This includes recently introduced new treatment strategies such as enteral nutrition. Non-compliance with published guidelines generally indicate areas in which consensus conference recommendations had to be based on insufficient evidence or expert opinion only and areas where controlled clinical trials need to resolve controversial issues.

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