Physician Management of Celiac Disease: A Comparison of Disease Knowledge, Diagnosis, and Patient Management between Gastroenterologists and Primary Care Physicians in Germany, Italy, Spain, and the United States – Findings from a Real-World Survey

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Word count: 399 (Target: 350-400)

Background: Gastroenterologists (GIs) and primary care physicians (PCPs) are both involved in the diagnosis and management of celiac disease (CeD). However, little is known about the differences in disease knowledge and approaches to diagnosing and managing patients with CeD between these physician groups. We aimed to explore these differences.

Materials and methods: Data were extracted from the Adelphi CeD Disease Specific Programme™,[1] a cross-sectional survey of GIs and PCPs involved in the management of patients with CeD conducted in Germany, Italy, Spain, and the United States of America (USA) from July 2021-January 2022. Physicians completed an attitudinal survey pertaining to their treatment practises, diagnostic and CeD monitoring practises, factors determining disease progression, severity, remission, villus atrophy, and gluten intake. Data were split into GI and PCP responses and compared using t-test, Fisher's exact and Chi-squared tests, as appropriate; p-values <0.05 were considered statistically significant.

Results: In total 278 physicians (Germany, 61; Italy, 60; Spain, 60; USA, 97), comprised of 178 GIs and 100 PCPs were included. GIs reported higher use of biopsies, blood tests, and imaging tests than PCPs for diagnosis ($p<0.05$), with similar trends observed for monitoring tests (Figure 1). Marsh classification use was low among PCPs; 70% stated they do not use it, compared to 26% of GIs ($p<0.01$). Regardless of villus atrophy level, more PCPs than GIs stated they don't know whether villus atrophy is reversible for patients with CeD ($p<0.01$). GIs were more likely to take villus atrophy into account when determining disease progression (GI 75%, PCP 47%), disease severity (GI 75%, PCP 54%), and remission status (GI 72%, PCP 51%; all $p<0.01$). Differences were seen in the perceived safe level of gluten intake for patients with CeD; 58% of GIs stated there is no safe level, compared to 35% of PCPs. In addition, 17% of PCPs stated they don't know if gluten intake is acceptable for non-symptomatic patients (vs 8% of GIs, $p=0.02$). Despite the disparities, 60% of GIs and 50% of PCPs stated increased awareness and education of PCPs is the main attribute that would help facilitate early diagnosis of CeD (Table 1).

Conclusion: This study showed key differences in CeD diagnosis and management between GIs and PCPs and an irrefutable knowledge gap observed among PCPs. This highlights a need for further education to improve the consistency of care for patients with CeD.

Bibliography:

[1]Anderson P, et al., Cur Med Res Opin. 2008;24(11):3063-72

Figure 1. Tests used by gastroenterologists (GIs) and primary care physicians (PCPs) to diagnose and monitor patients with celiac disease

*GI – gastroenterologist; PCP – Primary Care Physician; Disease type; Non-symptomatic, Symptomatic, Refractory; *Statistical significance, α=0.05*

Table 1. Gastroenterologist (GI) and primary care physician (PCP) reported patient diagnosis and management practises

		GIs	PCPs	p-values
Do you use Marsh classification? n (%)		**n=178**	**n=100**	<0.01*
Yes, and I do the classification		67 (37.6)	7 (7.0)	
Yes, I use it if one has been given by another HCP		64 (36.0)	23 (23.0)	
No		47 (26.4)	70 (70.0)	
In what percentage of patients with CeD is the villus atrophy …		**n=178**	**n=100**	
Mild villus atrophy	Reversible, mean (SD)	74.1 (31.3)	48.1 (40.4)	<0.01*
	Nonreversible, mean (SD)	13.0 (17.4)	13.9 (19.7)	0.70
	Don't know, mean (SD)	12.9 (30.3)	38.1 (46.5)	<0.01*
Marked villus atrophy	Reversible, mean (SD)	59.4 (31.1)	33.8 (31.6)	<0.01*
	Nonreversible, mean (SD)	26.1 (24.2)	25.7 (25.8)	0.89
	Don't know, mean (SD)	14.5 (30.9)	40.6 (45.5)	<0.01*
Complete villus atrophy	Reversible, mean (SD)	43.3 (32.7)	17.6 (24.1)	<0.01*
	Nonreversible, mean (SD)	37.5 (31.6)	33.9 (36.3)	0.38
	Don't know, mean (SD)	19.2 (34.2)	48.6 (46.5)	<0.01*
How do you measure disease progression? n (%)		**n=178**	**n=100**	
Test results (serological/ blood)		137 (77.0)	61 (61.0)	<0.01*
Villus atrophy / degree of villus loss or regression		134 (75.3)	47 (47.0)	<0.01*
How the patient is feeling / quality of life		113 (63.5)	75 (75.0)	0.06
Persistence of symptoms		112 (62.9)	68 (68.0)	0.43
Progressive constitutional symptoms		86 (48.3)	51 (51.0)	0.71
Imaging tests (endoscopy)		84 (47.2)	43 (43.0)	0.53
Other		1 (0.6)	0 (0.0)	1.00
Top three factors taken into account to determine CeD severity? n (%)		**n=178**	**n=100**	
Symptoms		134 (75.3)	77 (77.0)	0.77
Villus atrophy/ degree of villus loss regression		134 (75.3)	54 (54.0)	<0.01*
Test results		123 (69.1)	54 (54.0)	0.01*
What factors do you use to determine if a patient is in remission? n (%)		**n=178**	**n=100**	
Lack of symptoms		138 (77.5)	85 (85.0)	0.16
Serological results (IgA-EMA and tTG-IgA)		147 (82.6)	60 (60.0)	<0.01*
Villus recovery / Histology tests		129 (72.5)	51 (51.0)	<0.01*
Other		3 (1.7)	0 (0.0)	0.55
Is there a safe level of gluten intake for patients with CeD to ingest? n (%)		**n=160**	**n=100**	
Yes, patients can safely intake a level of gluten		8 (5.0)	8 (10.1)	<0.01*
Varies between type of CeD		15 (9.4)	16 (20.3)	
Depends on the patient		45 (28.1)	27 (34.2)	
No safe level		92 (57.5)	28 (35.4)	
		n=178	**n=100**	
Physicians selecting 'Don't know'		18 (10.1)	21 (21.0)	0.01*
If the patient is non-symptomatic, is gluten intake acceptable? n (%)		**n=164**	**n=83**	
Yes		30 (18.3)	18 (21.7)	0.61
No		134 (81.7)	65 (78.3)	
		n=178	**n=100**	
Physicians selecting 'Don't know'		14 (7.9)	17 (17.0)	0.02*
Top three attributes that would help facilitate the early diagnosis of CeD, n (%)		**n=178**	**n=100**	
Increased awareness/ education of PCPs		106 (59.6)	50 (50.0)	0.13
Screening programs		67 (37.6)	39 (39.0)	0.90
Availability of diagnostic test(s)		56 (31.5)	40 (40.0)	0.19

*CeD - celiac disease; GI – Gastroenterologist; HCP - health care professional; IgA-EMA – immunoglobin a antiendomysial; PCP – primary care physician; SD – standard deviation; tTG-IgA – tissue transglutaminase immunoglobulin A; *Statistical significance, α=0.05*

Keywords: Celiac disease, Patient centred care, Gastroenterologist, Primary care physicians, Disease management