DO GERIATRIC PATIENTS WITH CELIACS DISEASE HAVE HIGHER RATES COMPLICATIONS AND MORTALITY?

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BACKGROUND
As the incidence of Celiac disease in the geriatric population increases, it's important to understand the disease and specific complications they may be predisposed to. The nuanced symptomatic presentation in the elderly can lead to severe complications due to delayed diagnosis. The aim of this study was to determine the rate of complications and mortality of elderly patients as compared to younger patients with Celiac disease.

METHODS
The National Inpatient Sample 2001-2013 database was queried for patients Celiac Disease using International Classification of Diseases, Ninth Revision (ICD-9) codes. Myocardial Infarctions, Pneumonia, Urinary Tract Infections, and Acute Renal Failure were identified with their respective ICD-9 codes. A chi-squared analysis was performed to determine variables to be included in a multivariable analysis. A binary logistic regression analysis was used to examine the variables, with a significance level of $p < 0.001$.

RESULTS
A total of 87,823 patients were identified with Celiac, of which 25,818 (29.4%) were age 65 or older. After incorporating demographic and social variables, the geriatric population had a significantly higher likelihood of having a myocardial infarction (OR=2.82), pneumonia (OR=1.72), urinary tract infection (OR=1.61), malnutrition (OR=1.19), and acute renal failure (OR=2.18). Geriatric patients with Celiac Disease had a significantly higher likelihood of dying during the hospital stay (OR=10.24).

CONCLUSION
There are many age-related differences in the presentation and clinical course of Celiac disease between the younger adult and geriatric population. The elderly was found to be more likely to experience life-threatening complications as a result of Celiac disease. A greater understanding of factors contributing to the more complicated clinical courses of Celiac disease in the elderly is needed to improve quality of life, morbidity, and mortality in this population. The markedly high likelihood of mortality in this population should be further investigated to prevent treatable causes of death.

Table 1. Predictors of Complications in Geriatric Patients Admitted Primarily for Celiac Disease

Variable	P-Value	Odds Ratio (95% CI)
Race		
Caucasian	Reference	
African American	.000*	0.35 (0.30-0.40)
Hispanic	.041	0.88 (0.77-1.00)
Asian, Pacific Islander, Native American	.000*	0.62 (0.54-0.72)
Gender		
Males	Reference	
Females	.000*	0.89 (0.85-0.94)
Insurance Status		
Private Insurance	Reference	
Medicaid	.000*	0.32 (0.27-0.38)
Medicare	.000*	71.50 (67.88-75.30)
No insurance	.000*	0.61 (0.50-0.75)
Other insurance status	.559	1.05 (0.89-1.24)
Myocardial Infarction		
Not Present	Reference	
Present	.000*	2.82 (2.26-3.52)
Pneumonia		
Not Present	Reference	
Present	.000*	1.72 (1.50-1.97)
Urinary Tract Infection		
Not Present	Reference	
Present	.000*	1.61 (1.45-1.79)
Malnutrition		
Not Present	Reference	
Present	.005	1.19 (1.05-1.35)
Acute Renal Failure		
Not Present	Reference	
Present	.000*	2.18 (1.92-2.49)
Death		
Not Present	Reference	
Present	.000*	10.24 (6.88-15.24)

* significance level p<0.001