Prevalence of Gastrointestinal Hemorrhage in Patients with Amyloidosis: A Population Based Study

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Introduction

- Amyloidosis is characterized by deposition of insoluble protein fibrils in the extracellular space

- Gastrointestinal (GI) amyloidosis commonly results from infiltration of the mucosal lining and is most prevalent in the upper GI tract and colorectum

- Gastrointestinal hemorrhage (GIB) is the presenting symptom in 25-45% of patients with GI amyloidosis

- Limited epidemiologic data exists on the overall prevalence of GIB in patients with amyloidosis

Methods and Materials

- The aim of this study was to investigate if amyloidosis is associated with increased overall risk of GIB and to report the specific etiologies of GIB in these cases

- Data was collected from a commercial database (Explorys Inc, Cleveland, OH), an aggregate of EHR data from 27 integrated healthcare systems in the US between 12/2016-12/2021

- We identified patients with amyloidosis based on SNOMED-CT

- We compared the prevalence of GIB sources at least 30 days post-amyloidosis diagnosis to a control cohort without amyloidosis

- A univariate analysis was conducted using Microsoft Excel and MedCalc statistical software

Results

	Amyloidosis	No Amyloidosis
Adult (18-65)	5050	20089990
Senior (65+)	11520	7957930
Caucasian	11690	18510720
African American	3480	3874420
Asian	280	541370
Female	8160	18709630
Male	9070	15092940
Total	17350	34046410

Table 1. Baseline demographics

	Amyloidosis	No Amyloidosis	Prevalence in Amyloidosis /100,000	Prevalence in No Amyloidosis /100,000	Odds Ratio	95% CI
Gastrointestinal hemorrhage	1270	1213700	7319.88	3564.84	2.05	1.95-2.17
Upper gastrointestinal hemorrhage	400	303000	2305.48	889.96	2.59	2.35-2.85
Gastric ulcer with hemorrhage	70	41160	403.46	120.89	3.34	2.64-4.22
Gastric ulcer	250	205990	1440.92	605.03	2.38	2.11-2.69
Duodenal ulcer with hemorrhage	60	59840	518.73	175.76	2.95	2.40-3.63
Duodenal ulcer	100	84440	576.37	248.01	2.32	1.91-2.83
Lower gastrointestinal hemorrhage	660	781410	3804.03	2295.13	1.66	1.54-1.79
Bleeding Diverticulosis	30	24110	172.91	70.82	2.44	1.71-3.49
Angiodysplasia of Colon	50	19460	288.18	57.16	5.04	3.82-6.65
Angiodysplasia of Intestine	80	39450	461.10	115.87	3.98	3.20-4.95

Table 2. Prevalence and odds ratios of different etiologies of GIB in patients with and without amyloidosis.
*All odds ratios calculated in this analysis were associated with p<0.001
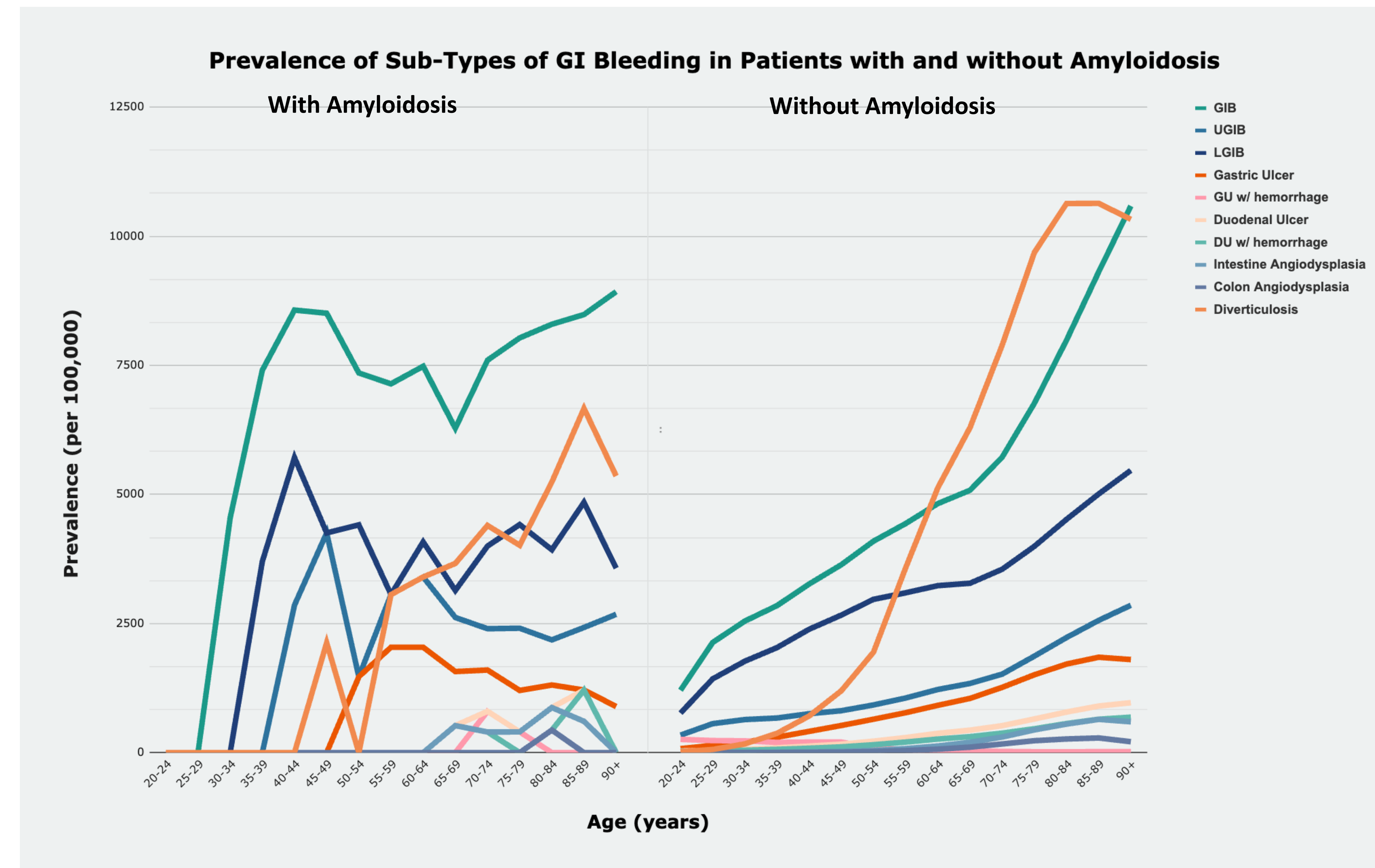

Figure 1.

Results

- 34,063,760 patients were initially identified, of which 17,350 had a diagnosis of amyloidosis

- 1,270 cases of GI hemorrhage in patients with amyloidosis

- The overall prevalence with and without amyloidosis was 7320 and 3565 (per 100,000), with an odds ratio of 2.05

- The overall prevalence of upper GI hemorrhage with and without amyloidosis was 2306 and 890 (per 100,000) with an odds ratio of 2.59

- The overall prevalence of lower GI hemorrhage with and without amyloidosis was 3804and 2295 (per 100,000), with an odds ratio of 1.66

Conclusions

- GI hemorrhage was significantly more prevalent in patients with amyloidosis compared to those without amyloidosis over a 5-year period

- A prospective study using biopsy-identified GI amyloidosis would be helpful in further characterizing these findings

- Limitations

  - Inability to isolate "gastrointestinal amyloidosis" as a specific diagnosis
  - Diagnoses were not necessarily biopsy-proven

Contact

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