

## STUDY REPORT SUMMARY

### ASTRAZENECA PHARMACEUTICALS

**FINISHED PRODUCT:** None

**ACTIVE INGREDIENT:** None

<b>Study No: NIS-GEU-DUM-2008/2 (NCT00797641)</b>
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<b>European Survey of Non-Variceal Upper Gastro Intestinal Bleeding</b>
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**Developmental phase:** Epidemiological Study

**Study Completion Date:** 20 Mar 2009

**Date of Report:** 09 Sep 2009

### OBJECTIVES:

- a. Primary objective:
  - To describe clinical outcomes associated with current endoscopic and pharmacological treatment strategies in several European countries, related to continuation of bleeding, re-bleeding, surgery and in-hospital mortality.
- b. Objectives:
  - To describe clinical management and how this compares across countries and hospital types.
  - To assess predictive factors for clinical management strategies.
  - To assess predictive factors related to clinical outcomes.
  - To assess health care resource consumption in patients admitted with NVUGIB and the main drivers.

### METHODS:

This was an observational, international, multicentre, retrospective cohort study. Due to the study design, variables were presented by descriptive statistics. Categorical data were reported as frequencies and proportions. Continuous data were reported as means and standard deviations. Where appropriate, alternative descriptive statistics such as quartile ranges, and medians with ranges for categorical and continuous data respectively were reported.

Multivariable analyses were performed using random-intercept mixed model logistic regression to account for clustering by study centre. Model creation and selection was based on *a priori* clinical and biological considerations. The significance level was 5% for keeping independent predictors in the models. Statistical analyses were performed in R (R Foundation for Statistical Computing, Vienna, Austria).

## RESULTS:

**Table 1.-** Description of patient characteristics by country (N = 2,659).

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,659</b>	<b>426</b>	<b>201</b>	<b>402</b>	<b>400</b>	<b>404</b>	<b>403</b>	<b>423</b>
	<b>(100.0)</b>	<b>(16.02)</b>	<b>(7.56)</b>	<b>(15.12)</b>	<b>(15.04)</b>	<b>(15.19)</b>	<b>(15.16)</b>	<b>(15.91)</b>
<b>Age (years)**</b>	<b>66.70</b>	68.98	66.33	68.07	72.01	68.46	65.44	57.75
	<b>(17.24)</b>	(15.52)	(15.08)	(16.48)	(14.70)	(17.05)	(17.96)	(18.85)
<b>Gender (% male)</b>	<b>64.72</b>	58.69	68.66	66.17	55.75	66.83	71.71	67.38
<b>Race (%)</b>								
Caucasian	<b>95.49</b>	96.24	99.5	99.5	97.25	81.19	96.53	100
Black	<b>0.38</b>	0.94	0	0.25	0.25	0.74	0.25	0
Oriental	<b>0.75</b>	1.17	0.5	0.25	2	0	1.24	0
Other	<b>0.38</b>	0.47	0	0	0.25	0	1.74	0
Unknown	<b>3.01</b>	1.17	0	0	0.25	18.07	0.25	0
<b>History of alcohol abuse (%)</b>	<b>13.73</b>	18.54	13.93	8.46	12.75	16.58	20.6	5.44
<b>Smoking (%)</b>								
Current	<b>17.79</b>	16.43	22.39	13.68	24	9.41	20.6	20.33
Ex-smoker	<b>16.77</b>	15.96	30.35	17.91	21.75	3.71	20.35	14.42
Non-smoker	<b>38.92</b>	38.5	39.3	25.62	41.75	37.38	40.69	48.94
Unknown	<b>26.51</b>	29.11	7.96	42.79	12.5	49.5	18.36	16.31
<b>Comorbidities (% ≥1)</b>	<b>68.26</b>	76.29	60.7	64.68	77	72.03	62.53	60.76
<b>Comorbidities (number)**</b>	<b>1.17</b>	1.47	1.06	1.14	1.39	1.07	1.11	0.91
	<b>(1.11)</b>	(1.23)	(1.13)	(1.13)	(1.14)	(0.91)	(1.16)	(0.92)
<b>Comorbidities [MR] (%)</b>								
Ischemic heart dis.	<b>21.78</b>	28.64	31.84	19.9	32	14.11	10.67	20.09
Cardiac failure	<b>11.77</b>	15.02	11.94	8.71	14.75	10.89	13.65	7.57
Respiratory disease	<b>10.87</b>	15.02	6.97	10.45	13.5	9.41	13.15	5.67
Cancer / malignancy	<b>9.67</b>	15.96	5.47	9.7	13	6.44	9.43	5.44
Stroke	<b>8.54</b>	9.86	6.47	7.46	12	8.42	9.93	4.73
Dementia	<b>4.29</b>	4.23	3.98	5.72	5.25	6.19	3.72	0.95
Documented cirrhosis	<b>4.21</b>	6.34	0.99	6.97	2.5	6.19	3.97	0.95
Renal disease	<b>8.95</b>	12.21	7.46	10.95	9.75	7.67	7.2	6.62
Other significant dis.	<b>37.27</b>	39.44	30.35	34.58	36.5	37.62	39.45	39.24
<b>Haematological condition (%)</b>	<b>6.24</b>	7.75	5.47	4.23	4	4.7	10.92	6.15
<b>NVUGIB history (%)</b>	<b>16.06</b>	10.09	14.43	16.92	15.5	16.34	20.1	18.44

Sociodemographic characteristics missing for one patient. Values in the Table are percentages, except where indicated.

\* Values are Number (%). \*\* Values are Mean (SD). [MR] Multiple Response.

**Table 2.-** Description of hospital admission characteristics by country (N = 2,657).

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,657</b>	<b>425</b>	<b>201</b>	<b>402</b>	<b>399</b>	<b>404</b>	<b>403</b>	<b>423</b>
	<b>(100.0)</b>	<b>(16.00)</b>	<b>(7.56)</b>	<b>(15.13)</b>	<b>(15.02)</b>	<b>(15.21)</b>	<b>(15.17)</b>	<b>(15.92)</b>
<b>Presentation to Hospital (%)</b>								
Acute admission with NVUGIB	<b>85.32</b>	70.35	94.53	85.82	80.2	82.43	92.56	96.22
NVUGIB in established inpatient	<b>14.68</b>	29.65	5.47	14.18	19.8	17.57	7.44	3.78
<b>NVUGIB symptoms [MR] (%)</b>								
Fresh blood haemat.	<b>27.89</b>	30.82	20.9	25.12	24.81	31.68	31.02	27.19
Melaena	<b>67.86</b>	60.24	83.58	67.41	60.9	61.39	73.2	76.12
Shock / syncope	<b>9.03</b>	9.65	9.95	9.2	7.27	7.92	14.89	4.96
Coffee ground vom.	<b>14.79</b>	10.12	15.92	10.2	20.3	18.07	16.63	13.24
Blood up NG tube	<b>1.47</b>	1.18	1.99	2.74	1	1.73	0.25	1.65
Other	<b>10.91</b>	20.24	1	12.69	14.79	8.66	8.19	5.67
<b>Admission source (%)</b>								
Own home	<b>75.84</b>	63.76	80.6	81.84	67.92	81.19	82.13	76.36
Residential / nursing	<b>5.12</b>	7.53	4.48	2.24	11.03	5.94	3.97	0.47
Transfer from acute h.	<b>5.12</b>	0.94	4.48	3.48	2.76	3.47	4.71	15.37
Transfer from other h.	<b>2.6</b>	1.18	5.47	3.98	0.75	1.98	1.99	4.26
Established inpatient	<b>8.73</b>	23.53	1.99	6.72	16.54	3.47	3.47	1.65
Don't know	<b>1.13</b>	2.35	0	1.49	0.25	1.24	1.24	0.71
Other	<b>1.47</b>	0.71	2.99	0.25	0.75	2.72	2.48	1.18
<b>Hemodynamic status (%)</b>								
Not shocked	<b>62.36</b>	59.76	58.21	69.9	69.17	55.69	56.58	65.25
Tachycardic	<b>18.29</b>	15.29	26.87	16.17	14.79	17.57	23.82	17.97
Hypotensive [SBP < 100]	<b>12.8</b>	12.47	11.44	11.19	10.78	15.35	14.14	13.48
Hypotensive [SBP < 70]	<b>1.43</b>	1.65	2.99	0.75	1.25	1.98	1.49	0.71
Hypotensive [SBP < 50]	<b>0.45</b>	0.47	0.5	0.75	0.5	0.74	0.25	0
Not available	<b>4.67</b>	10.35	0	1.24	3.51	8.66	3.72	2.6
<b>Current medication at admission [MR] (%)</b>								
No medication	<b>22.02</b>	20.24	11.94	27.11	13.53	23.51	19.6	32.62
Aspirin ≤ 100 mg/d	<b>20.14</b>	18.59	25.87	23.63	29.82	13.86	15.63	16.78
Aspirin > 100 mg/d	<b>9.94</b>	13.18	8.96	2.24	8.77	14.11	9.68	11.82
Warfarin	<b>10.16</b>	10.35	10.45	5.72	17.79	5.94	11.91	9.22
SSRI	<b>2.86</b>	6.12	1.99	1.99	5.51	0.99	2.48	0.47
NSAID	<b>19.68</b>	17.18	20.4	28.36	13.53	22.28	16.63	19.86
COX II inhib.	<b>1.13</b>	0.47	1.99	0.75	0.25	4.21	0.74	0
Fibrinolytic	<b>0.26</b>	0.23	0	0	0.75	0	0	0.7
GP IIb/IIIa inhib.	<b>2.37</b>	4.47	5.97	0.25	2.51	2.48	0.99	1.65
PPI	<b>13.81</b>	10.59	9.95	12.19	15.04	15.35	24.81	7.33
H2R inhib.	<b>1.99</b>	5.41	1	1.74	1.5	0.5	1.49	1.65
HP eradication	<b>0.08</b>	0	0	0	0.5	0	0	0
LMW heparin	<b>4.67</b>	10.12	3.98	6.97	7.02	0.99	2.23	0.95
Unfractionated heparin	<b>0.64</b>	0.94	0	0.75	0.5	1.49	0	0.47
Other	<b>36.47</b>	38.35	35.82	30.1	49.12	30.2	42.18	29.55
<b>Admission to large hospital, ≥ 500 beds (%)</b>								
	<b>63.18</b>	54.46	100	84.58	30	41.09	80.65	69.98
<b>Discharge (% discharged at 1 month)</b>								
	<b>94.2</b>	89.88	95.03	88.06	96.49	95.3	98.26	96.93
<b>Days hospitalised. ** †</b>								
	<b>6.88</b>	8.73	5.91	7.41	5.90	7.13	7.23	5.36
	<b>(5.85)</b>	(7.42)	(4.31)	(5.70)	(5.02)	(6.17)	(5.51)	(4.91)

Values in the Table are percentages, except where indicated. \* Values are Number (%). \*\* Values are Mean (SD).

[MR] Multiple Response. SSRI: selective serotonin reuptake inhibitor; NSAID: non-steroidal anti-inflammatory drug; H2R: H2 receptor inhibitor; HP: *H. pylori*; LMW: low molecular weight. † Does not include 213 patients with missing data for this variable.

**Table 3.-** Description of bleeding episode characteristics by country

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,655</b>	<b>425</b>	<b>201</b>	<b>401</b>	<b>400</b>	<b>404</b>	<b>401</b>	<b>423</b>
	<b>(100.0)</b>	<b>(16.01)</b>	<b>(7.57)</b>	<b>(15.10)</b>	<b>(15.07)</b>	<b>(15.22)</b>	<b>(15.10)</b>	<b>(15.93)</b>
<b>H. pilori test (% performed)</b>	<b>32.39</b>	44.94	36.32	40.15	32.25	17.08	30.67	26.95
<b>Rockall risk score (% available)</b>	<b>17.4</b>	0	26.37	43.14	0	0	18.2	38.53
<b>Blatchford risk score (% available)</b>	<b>9.57</b>	0	26.37	27.43	0	0	5.24	16.55
<b>ASA score (% available)</b>	<b>13.37</b>	2.35	8.96	35.16	4	0	13.47	27.42
<b>Diagnosis - Esophagus (%)</b>								
Varices	<b>1.02</b>	0.94	0.5	1.5	0.25	0.74	2	0.95
Esophagitis	<b>11</b>	16.94	10.95	7.23	10.25	13.86	7.48	9.93
Ulcer	<b>5.39</b>	9.65	3.48	5.74	5.25	1.98	5.74	4.73
Malignancy	<b>0.38</b>	0.71	1	0.25	0.5	0.25	0.25	0
Mallory-Weiss s.	<b>5.42</b>	5.88	3.48	4.99	6	5.69	8.48	2.6
<b>Diagnosis - Estomach (%)</b>								
Gastritis / erosions	<b>15.67</b>	8.94	26.37	9.48	10.75	22.77	10.22	26.24
Ulcer	<b>28.7</b>	28.24	29.85	32.17	28.5	30.69	24.44	27.66
Malignancy	<b>2.86</b>	3.29	3.48	2.24	1.75	2.72	4.24	2.6
Mallory-Weiss s.	<b>0.64</b>	1.18	1	0	1	0.99	0.5	0
Varices	<b>0.08</b>	0	0	0.25	0.25	0	0	0
Vascular ectasia	<b>0.98</b>	0.24	0.5	0.25	1.5	1.73	1.75	0.71
Portal hypert.	<b>0.75</b>	0.71	0.5	1.5	0.5	0.99	1	0
Angyodisp. w hem.	<b>1.69</b>	2.35	1.49	2	2.25	1.73	1.5	0.47
Dieulafoy lesion	<b>0.98</b>	0.24	0	2	1.75	0.5	1.25	0.71
<b>Diagnosis - Duodenum (%)</b>								
Erosive duodenitis	<b>6.4</b>	1.18	10.45	4.99	5	7.67	7.73	9.93
Ulcer	<b>34.58</b>	33.18	33.83	39.4	29.25	25.25	35.16	45.15
Malignancy	<b>0.53</b>	0.94	1	0.5	0.25	0	0.75	0.47
Hemobilia	<b>0.15</b>	0.47	0	0	0.25	0	0.25	0
Vascular ectasia	<b>0.49</b>	0.71	0.5	0.75	0.75	0.25	0.25	0.24
Angyodisp. w hem.	<b>0.72</b>	2.12	0.5	1.5	0	0.5	0.25	0
Dieulafoy lesion	<b>0.49</b>	0.94	0.5	0.75	0.5	0.74	0	0
<b>Ulcer size (cm.)** †</b>	<b>1.89</b>	2.40	1.62	1.43	1.94	2.47	1.93	1.85
	<b>(2.65)</b>	(3.01)	(1.63)	(1.50)	(3.46)	(4.28)	(2.18)	(2.32)

Values in the Table are percentages, except where indicated. \* Values are Number (%). \*\* Values are Mean (SD).

† Does not include 1,619 patients with missing data for this variable.

**Table 4.-** Management of bleeding episode characteristics by country.

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,654</b>	<b>423</b>	<b>201</b>	<b>401</b>	<b>400</b>	<b>403</b>	<b>403</b>	<b>423</b>
	<b>(100.0)</b>	<b>(15.94)</b>	<b>(7.57)</b>	<b>(15.11)</b>	<b>(15.07)</b>	<b>(15.18)</b>	<b>(15.18)</b>	<b>(15.94)</b>
<b>Intra-hospital management – Area (%)</b>								
Gen. medical ward	<b>36.96</b>	32.62	42.29	7.73	56.75	33.5	42.93	45.39
Medical assess.	<b>16.35</b>	12.77	25.87	18.7	7	42.43	11.66	1.65
Gen. surgical ward	<b>5.61</b>	4.02	0.5	13.72	11.25	1.24	0.99	5.2
Surgical assess.	<b>4.52</b>	1.65	0.5	4.99	4.25	14.14	4.47	0
Elderly care ward	<b>1.09</b>	4.96	0	0.5	1.5	0	0	0
GI bleeding unit	<b>7.27</b>	3.07	23.88	13.97	1.25	3.23	14.14	0.24
High depen. unit	<b>4.9</b>	3.07	0.5	17.46	5.75	0	1.74	3.78
Intensive care unit	<b>6.29</b>	17.02	1.49	2.49	9.75	1.74	1.24	7.33
Emergency obser.	<b>14.32</b>	19.15	3.98	19.2	0	0.74	18.86	31.91
Other	<b>2.49</b>	1.42	1	1.25	2.25	2.98	3.47	4.26
Unknown	<b>0.1</b>	0.24	0	0	0.25	0	0.5	0.24
<b>Intra-hospital management – Team (%)</b>								
GI bleeding team / Gastroenterology	<b>46.68</b>	55.08	58.71	45.64	30.75	19.35	57.07	64.78
General medical	<b>33.76</b>	26.48	39.3	29.93	44.25	57.82	25.06	17.49
General surgical	<b>10.7</b>	4.96	0.5	17.71	15.5	20.6	6.2	4.96
Care of the elderly	<b>0.6</b>	2.13	0	0	1.75	0	0	0
Intensive and Critical Care Unit / Anaesthetics	<b>3.73</b>	9.69	1.49	4.74	6.25	0.5	0.5	1.65
Other	<b>4.37</b>	1.42	0	2	1.25	1.74	10.67	11.11
Don't know	<b>0.15</b>	0.24	0	0	0.25	0	0.5	0
<b>Patient transferred to another team for the management of the NVUGIB [MR] (%)</b>								
Any	<b>31.99</b>	32.62	11.94	24.44	30.5	60.05	31.76	22.93
GI bleeding team / Gastroenterology	<b>25.5</b>	18.91	4.98	17.21	24.75	58.31	27.79	16.78
General medical	<b>2.11</b>	1.89	3.98	3.99	1.25	1.74	0.5	2.36
General surgical	<b>2.6</b>	0.95	1.49	2.49	2	5.96	1.49	3.31
Care of the elderly	<b>0.15</b>	0.95	0	0	0	0	0	0
Intensive and Critical Care Unit / Anaesthetics	<b>3.77</b>	13	1	0.5	4.75	1.74	1.74	1.89
Other	<b>0.64</b>	0.71	1	0.25	0.25	1.74	0.74	0
<b>Blood coagulation treatment before endoscopy [MR] (%)</b>								
Any	<b>11.61</b>	9.22	22.89	4.49	14	10.17	12.16	13.95
Vitamin K	<b>6.18</b>	5.2	10.95	1.5	5.5	5.96	10.17	6.38
Cryoprecipitate	<b>2.86</b>	2.36	9.95	0	4.25	1.49	0.25	5.2
Prothrom. compl.	<b>0.83</b>	1.18	0	0	1	0	1.74	1.42
Recomb. F VIIa	<b>0.15</b>	0	0	0	0.75	0	0.25	0
Other	<b>4.67</b>	2.84	11.44	3.24	7	2.98	2.48	6.15
<b>NVUGIB treatment before endoscopy [MR] (%)</b>								
Any	<b>68.91</b>	34.99	69.65	85.54	54.5	67.99	82.13	88.65
PPI	<b>66</b>	32.62	69.65	73.82	54	66.5	80.15	87.71
Omeprazole	<b>23.13</b>	3.78	27.86	43.39	2	21.84	37.72	28.37
Esomeprazole	<b>20.8</b>	10.87	25.37	25.69	28	32.51	4.71	21.28
Pantoprazole	<b>21.67</b>	17.97	15.92	4.49	23.25	12.41	37.72	36.41
Lansoprazole	<b>0.41</b>	0	0.5	0	0.75	0	0	1.65
Rabeprazole	<b>0.04</b>	0	0	0.25	0	0	0	0
H2 receptor inhib.	<b>2.19</b>	1.65	0	8.98	0.75	0.99	0.74	1.18
Vaspressin or analog.	<b>1.77</b>	3.55	0	1.25	0	1.99	3.47	1.18
Other	<b>3.2</b>	0.47	1.49	10.47	0.5	2.48	4.96	1.42
<b>Route of administration of PPI before endoscopy [MR] (%)</b>								
Oral	<b>5.28</b>	6.15	1.99	6.98	13	4.22	1.74	1.42
IV boluses	<b>39.71</b>	17.97	37.31	39.15	33.5	53.35	48.64	47.52
IV infusion	<b>27.47</b>	17.26	31.84	28.68	19.75	9.93	37.47	48.94
Other	<b>0.15</b>	0	0.5	0.25	0	0	0.5	0

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**Table 4.-** Management of bleeding episode characteristics by country.

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,654</b>	<b>423</b>	<b>201</b>	<b>401</b>	<b>400</b>	<b>403</b>	<b>403</b>	<b>423</b>
	<b>(100.0)</b>	<b>(15.94)</b>	<b>(7.57)</b>	<b>(15.11)</b>	<b>(15.07)</b>	<b>(15.18)</b>	<b>(15.18)</b>	<b>(15.94)</b>
<b>Location of endoscopy (%)</b>								
Endoscopy department	<b>81.27</b>	79	82.1	60.3	85	86.6	83.6	92.2
Emergency theatre	<b>6.14</b>	3.1	4	22.7	7.8	0.2	4.7	0
Intensive or Critical Care Unit	<b>2.75</b>	9.2	0	0.7	6.2	0.2	0.5	0.7
High dependency unit	<b>0.15</b>	0.5	0	0	0	0	0.5	0
GI bleeding unit	<b>7.39</b>	6.1	13.9	12.5	0	12.4	9.2	1.2
Accident & Emergency unit	<b>0.64</b>	0.7	0	3.5	0	0	0	0
Medical ward	<b>0.08</b>	0	0	0	0	0	0	0.5
Surgical ward	<b>0.15</b>	0	0	0.2	0	0	0.2	0.5
Other	<b>0.83</b>	0	0	0	0.2	0	0.2	4.7
Unknown	<b>0.6</b>	1.4	0	0	0.8	0.5	1	0.2
<b>Stigmata of recent haemorrhage [MR] (%)</b>								
Any	<b>58.33</b>	69.5	54.23	63.34	52.25	56.58	61.54	48.7
Blood in upper GI tract	<b>21.51</b>	31.21	25.37	14.21	26.25	22.08	23.33	10.17
Visible vessel	<b>12.92</b>	15.13	11.94	12.47	10.25	9.93	13.4	16.55
Spurting vessel	<b>3.81</b>	5.67	1.49	6.23	3.25	0.99	5.21	2.6
Dark spot in ulcer base	<b>8.21</b>	9.46	11.94	11.72	8.5	4.71	8.19	4.96
Red spot / wheal markings	<b>4.03</b>	3.07	5.47	2	0.75	7.69	5.71	4.26
Nipple sign	<b>0.45</b>	0.47	0.5	1.5	0.25	0.25	0.25	0
Adherent clot	<b>12.17</b>	16.55	13.43	11.97	10.75	10.42	13.9	8.75
Oozing bleeding	<b>12.25</b>	17.49	7.96	13.22	10.75	7.44	12.9	13.48
<b>Therapeutic procedures during endoscopy [MR] (%)</b>								
Any	<b>35.83</b>	40.66	24.88	42.14	30.5	27.05	47.64	32.39
Ulcer base injection sclerotherapy	<b>11.53</b>	10.4	1.99	5.49	6.5	9.68	24.32	17.26
Epinephrine injection	<b>24.6</b>	21.75	19.9	30.42	21	21.09	35.98	20.09
BICAP / heater probe	<b>3.58</b>	8.98	1	4.24	5.25	1.24	1.49	1.42
Endoclip(s) applied	<b>8.33</b>	14.18	10.45	12.97	8	2.98	9.43	1.42
Variceal injection / sclerotherapy	<b>0.19</b>	0.24	0	0	0.25	0	0.25	0.47
Variceal banding	<b>0.26</b>	0.71	0.5	0	0	0	0.5	0.24
Glue injection	<b>0.19</b>	0	0	1.25	0	0	0	0
Argon Plasma Coagulation	<b>4.97</b>	3.31	1.99	11.97	3.25	4.47	2.48	5.91
Other	<b>0.79</b>	0.47	0	0.75	1.25	0.25	1.99	0.47
<b>NVUGIB treatment after endoscopy [MR] (%)</b>								
Any	<b>93.18</b>	90.78	95.02	96.01	86.5	93.55	95.29	95.98
PPI	<b>92.58</b>	89.83	95.02	95.26	86.5	93.55	94.54	94.56
Omeprazole	<b>26.6</b>	17.02	26.87	45.14	3	18.86	47.39	28.37
Esomeprazole	<b>32.06</b>	26.24	43.28	40.9	38.75	50.62	8.93	22.22
Pantoprazole	<b>32.03</b>	46.1	23.88	8.23	39.75	21.59	37.72	41.61
Lansoprazole	<b>1.51</b>	0.24	1	0.75	5	0.5	0.25	2.6
Rabeprazole	<b>0.45</b>	0.24	0	0.25	0	1.99	0.5	0
H2 receptor inhib.	<b>0.75</b>	1.18	0	0.75	1.25	0.25	0.25	1.18
Vaspressin or analog.	<b>1.47</b>	3.78	0	1.25	0	2.23	1.74	0.47
Other	<b>7.01</b>	4.02	5.47	17.96	3.25	10.42	3.47	4.02
<b>Route of administration of PPI after endoscopy (%)</b>								
Oral	<b>27.05</b>	35.93	18.91	26.43	45.75	28.04	18.11	12.53
IV boluses	<b>30.82</b>	24.59	31.34	28.93	25	56.82	23.08	26.71
IV infusion	<b>41.33</b>	46.34	45.77	42.64	23.5	17.37	57.82	56.97
Other	<b>0.34</b>	0	1	0	0	0.25	0.99	0.47
<b>Time from admission to endoscopy **</b>								
Days	<b>1.01</b>	1.14	1.35	0.76	1.22	1.15	0.62	1.03
	<b>(2.73)</b>	(3.44)	(4.92)	(2.12)	(2.28)	(2.85)	(1.35)	(2.14)
Hours †	<b>21.12</b>	24	35.52	--	21.36	11.28	13.2	23.76
	<b>(66.72)</b>	(90)	(140.4)	--	(30.72)	(27.84)	(36.96)	(36)

Values in the Table are percentages, except where indicated. \* Values are Number (%). \*\* Values are Mean (SD).

[MR] Multiple Response. † Does not include 1,541 patients with missing data for this variable.

**Table 5.-** Description of continued bleeding / re-bleeding by country.

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,653</b> <b>(100.0)</b>	<b>423</b> <b>(15.94)</b>	<b>201</b> <b>(7.58)</b>	<b>401</b> <b>(15.11)</b>	<b>400</b> <b>(15.08)</b>	<b>402</b> <b>(15.15)</b>	<b>403</b> <b>(15.19)</b>	<b>423</b> <b>(15.94)</b>
<b>Continued bleeding after first endoscopy (%)</b>	<b>7.27</b>	7.8	7.96	7.98	8	5.97	6.45	7.09
<b>Re-bleeding during hospitalization (%)</b>	<b>7.88</b>	10.4	7.46	8.98	9.75	4.98	6.7	6.62
<b>Re-bleeding after discharge (%)</b>	<b>2.6</b>	3.31	0.5	0.75	4.75	2.24	3.47	2.13
<b>Continued bleeding or re-bleeding (%)</b>	<b>12.33</b>	15.84	11.44	11.72	15.75	10.2	11.91	8.98
	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>327</b> <b>(100.0)</b>	<b>67</b> <b>(20.49)</b>	<b>23</b> <b>(7.03)</b>	<b>47</b> <b>(14.37)</b>	<b>63</b> <b>(19.27)</b>	<b>41</b> <b>(12.54)</b>	<b>48</b> <b>(14.68)</b>	<b>38</b> <b>(11.62)</b>
<b>Current medication when re-bleeding among participants with any continued bleeding or re-bleeding [MR] (%)</b>								
Aspirin ≤ 100 mg/d	<b>5.2</b>	7.46	4.35	0	11.11	4.88	4.17	0
Aspirin > 100 mg/d	<b>1.83</b>	2.99	0	0	1.59	4.88	0	2.63
Warfarin	<b>2.45</b>	1.49	4.35	2.13	4.76	2.44	2.08	0
SSRI	<b>2.14</b>	4.48	0	0	4.76	2.44	0	0
NSAID	<b>1.53</b>	0	0	2.13	6.35	0	0	0
COX II inhibitor	<b>0</b>	0	0	0	0	0	0	0
Fibrinolytic	<b>0.31</b>	0	0	0	1.59	0	0	0
GP IIb/IIIa inhibitor	<b>0.92</b>	1.49	0	0	0	2.44	2.08	0
PPI	<b>65.7</b>	65.67	43.48	76.6	69.84	65.85	66.67	57.89
H2R inhibitor	<b>0.31</b>	0	0	0	0	0	2.08	0
HP eradication treatment	<b>1.53</b>	0	4.35	0	4.76	0	0	2.63
Low molecular weight heparin	<b>9.17</b>	10.45	17.39	12.77	4.76	4.88	12.5	5.26
Unfractionated heparin	<b>1.22</b>	4.48	0	2.13	0	0	0	0
Other	<b>25.38</b>	31.34	26.09	14.89	31.75	19.51	18.75	31.58

Values in the Table are percentages, except where indicated. \* Values are Number (%). [MR] Multiple Response.

SSRI: selective serotonin reuptake inhibitor; NSAID: non-steroidal anti-inflammatory drug; H2R: H2 receptor inhibitor;

HP: *H. pylori*; LMW: low molecular weight

**Table 6.-** Description of related procedures by country.

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,657</b>	<b>426</b>	<b>201</b>	<b>402</b>	<b>400</b>	<b>403</b>	<b>403</b>	<b>422</b>
	<b>(100.0)</b>	<b>(16.03)</b>	<b>(7.56)</b>	<b>(15.13)</b>	<b>(15.05)</b>	<b>(15.17)</b>	<b>(15.17)</b>	<b>(15.88)</b>
<b>Transfusions within 12 hours (%)</b>	<b>84.64</b>	74.18	86.07	87.06	86	92.31	80.65	87.44
IV fluid (units)**	<b>1.73</b>	1.01	1.40	1.35	2.54	1.09	2.34	2.27
	<b>(3.73)</b>	(1.36)	(0.99)	(1.34)	(4.62)	(1.45)	(7.03)	(3.48)
Red blood cell (units) **	<b>1.12</b>	1.25	0.92	1.04	1.46	0.92	0.95	1.18
	<b>(1.49)</b>	(1.49)	(1.12)	(1.69)	(1.77)	(1.23)	(1.30)	(1.48)
Other fluid (units)**	<b>0.37</b>	0.28	0.62	0.60	0.23	0.35	0.12	0.52
	<b>(0.99)</b>	(0.90)	(0.96)	(1.17)	(0.90)	(1.20)	(0.54)	(1.00)
<b>Transfusions within 30 days (%)</b>	<b>83.74</b>	70.42	85.57	84.58	87.5	92.31	80.89	86.49
IV fluid (units)**	<b>5.70</b>	3.02	6.08	4.18	6.42	3.34	8.87	8.24
	<b>(9.28)</b>	(5.58)	(6.31)	(7.06)	(10.25)	(5.66)	(13.43)	(10.54)
Red blood cell (units) **	<b>2.01</b>	1.88	1.88	1.88	2.79	1.57	1.64	2.34
	<b>(3.47)</b>	(3.00)	(2.36)	(5.42)	(4.10)	(2.03)	(2.19)	(3.31)
Other fluid (units)**	<b>1.36</b>	0.64	2.12	3.11	0.89	0.48	0.52	2.15
	<b>(4.49)</b>	(2.23)	(4.07)	(8.35)	(3.54)	(1.66)	(2.12)	(4.79)
<b>Angiographic coiling (%)</b>								
During hospitalization	<b>1.02</b>	1.17	1.49	0.5	3.25	0	0.74	0.24
After discharge	<b>0.19</b>	0.7	0	0	0.5	0	0	0
Any	<b>1.17</b>	1.64	1.49	0.5	3.75	0	0.74	0.24
<b>Surgery except endoscopy (%)</b>								
During hospitalization	<b>2.52</b>	2.35	2.99	2.49	3.25	1.99	2.73	2.13
After discharge	<b>0.83</b>	1.17	1	0.5	0.5	0.99	1.24	0.47
Any	<b>3.27</b>	3.29	3.98	2.99	3.5	2.98	3.97	2.61
<b>Additional endoscopies (%)</b>	<b>28.64</b>	53.52	19.9	32.59	21	27.3	28.54	12.56
<b>Reasons for additional endoscopy [MR] (%)</b>								
Check / repeat therapeutic procedure	<b>19.27</b>	44.84	12.94	22.64	11.5	17.87	15.38	5.69
For further bleeding (continued or re-bleeding)	<b>5.19</b>	6.34	4.48	5.97	5	4.22	5.71	4.27
Patient unstable	<b>0.04</b>	0	0	0	0	0	0	0.24
Technical / equipment failure	<b>0.08</b>	0	0	0	0	0.25	0.25	0
Inadequate view	<b>2.56</b>	1.41	1.99	2.49	3	2.48	4.47	1.9
Other	<b>1.47</b>	0.94	0.5	1.49	1.5	2.48	2.73	0.24
<b>Total number of endoscopies</b>								
During hospitalization**	<b>1.34</b>	1.74	1.17	1.42	1.28	1.33	1.31	1.14
	<b>(0.67)</b>	(0.94)	(0.41)	(0.72)	(0.62)	(0.57)	(0.53)	(0.40)
Within 30 days**	<b>1.48</b>	1.88	1.29	1.48	1.59	1.39	1.36	1.27
	<b>(1.95)</b>	(0.99)	(0.52)	(0.77)	(4.55)	(0.62)	(0.57)	(0.53)

Values in the Table are percentages, except where indicated. \* Values are Number (%). \*\* Values are Mean (SD). [MR] Multiple Response.



**Table 7.-** Description of complications by country.

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Number (%)*</b>	<b>2,648</b>	<b>426</b>	<b>201</b>	<b>401</b>	<b>400</b>	<b>396</b>	<b>401</b>	<b>423</b>
	<b>(100.0)</b>	<b>(16.09)</b>	<b>(7.59)</b>	<b>(15.14)</b>	<b>(15.11)</b>	<b>(14.95)</b>	<b>(15.14)</b>	<b>(15.97)</b>
<b>NVUGIB Complications [MR] (%)</b>	<b>7.67</b>	10.09	4.98	3.74	6.25	11.62	9.98	5.67
Pneumonia	<b>1.85</b>	3.05	1	0.25	2.25	3.79	1	1.18
Liver failure	<b>0.87</b>	0.94	1	0.25	0.25	2.78	1	0
Renal failure	<b>2.19</b>	3.29	1.99	0.75	1.5	3.79	2.74	1.18
Stroke	<b>0.38</b>	0.47	0	0.25	0.75	0.25	0.75	0
DVT	<b>0.26</b>	0	0	0	0.25	0	0.5	0.95
Pulm. Embolism	<b>0.15</b>	0.23	0	0.25	0.25	0	0	0.24
Perforation	<b>0.57</b>	1.17	0	0.75	0.5	0	1	0.24
Cardiac event	<b>2.57</b>	4.23	2.49	1.5	2.75	2.02	2.24	2.6
Other	<b>2.49</b>	2.35	1.49	1	1	5.3	3.74	2.13
<b>Death (%)</b>								
During hospital.	<b>4</b>	5.63	2.49	4.49	5	4.8	2.49	2.36
After discharge	<b>1.21</b>	2.35	0	1	1.75	1.26	1	0.47
Any	<b>5.21</b>	7.98	2.49	5.49	6.75	6.06	3.49	2.84
<b>Cause of death (N)**</b>								
<b>Bleeding related</b>	<b>25</b>	6	3	5	3	4	1	3
Uncontrolled bleeding	<b>18</b>	5	3	3	2	2	1	2
Within 48h after endoscopy	<b>3</b>	1	0	0	1	0	0	1
Surgical complications	<b>3</b>	0	0	1	0	2	0	0
Endoscopic related	<b>1</b>	0	0	1	0	0	0	0
<b>Non-Bleeding related</b>	<b>113</b>	28	2	17	24	20	13	9
Cardiac causes	<b>23</b>	4	2	2	7	3	0	5
Pulmonary causes	<b>13</b>	1	0	1	0	6	4	1
Cerebrovascular diseases	<b>6</b>	3	0	1	1	1	0	0
Multi-organ failure	<b>40</b>	15	0	5	7	6	5	2
Terminal malignant diseases	<b>26</b>	4	0	6	8	3	4	1
Unknown	<b>5</b>	1	0	2	1	1	0	0

Values in the Table are percentages, except where indicated. \* Values are Number (%). \*\* Values are Number. [MR] Multiple Response.

**Table 8.-** Summary of health care resources by country.

	<b>Overall</b>	<b>Belgium</b>	<b>Greece</b>	<b>Italy</b>	<b>Norway</b>	<b>Portugal</b>	<b>Spain</b>	<b>Turkey</b>
<b>Days hospitalised. * †</b>	<b>6.88</b>	8.73	5.91	7.41	5.90	7.13	7.23	5.36
	<b>(5.85)</b>	(7.42)	(4.31)	(5.70)	(5.02)	(6.17)	(5.51)	(4.91)
<b>Therapeutic procedures during endoscopy (%)</b>	<b>35.83</b>	40.66	24.88	42.14	30.5	27.05	47.64	32.39
<b>Transfusions within 30 days (%)</b>	<b>83.74</b>	70.42	85.57	84.58	87.5	92.31	80.89	86.49
<b>Angiographic coiling (%)</b>	<b>1.17</b>	1.64	1.49	0.5	3.75	0	0.74	0.24
<b>Surgery except endoscopy (%)</b>	<b>3.27</b>	3.29	3.98	2.99	3.5	2.98	3.97	2.61
<b>Additional endoscopies (%)</b>	<b>28.64</b>	53.52	19.9	32.59	21	27.3	28.54	12.56
<b>Total number of endoscopies</b>								
During hospitalization*	<b>1.34</b>	1.74	1.17	1.42	1.28	1.33	1.31	1.14
	<b>(0.67)</b>	(0.94)	(0.41)	(0.72)	(0.62)	(0.57)	(0.53)	(0.40)
Within 30 days*	<b>1.48</b>	1.88	1.29	1.48	1.59	1.39	1.36	1.27
	<b>(1.95)</b>	(0.99)	(0.52)	(0.77)	(4.55)	(0.62)	(0.57)	(0.53)

Values in the Table are percentages, except where indicated.

\* Values are Mean (SD). † Does not include 213 patients with missing data for this variable.

**Table 9.-** Determinants of administration of PPI as a treatment for NVUGIB before endoscopy.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	10.63 (3.13 – 36.12)	<0.001	9.62 (2.71 – 34.14)	< <b>0.001</b>
Italy	16.75 (5.21 – 53.91)	<0.001	17.05 (5.24 – 55.47)	< <b>0.001</b>
Norway	3.69 (1.33 – 10.18)	0.01	3.58 (1.28 – 10.02)	<b>0.02</b>
Portugal	9.97 (3.21 – 30.91)	<0.001	9.28 (2.99 – 28.80)	< <b>0.001</b>
Spain	21.25 (8.18 – 55.25)	<0.001	19.54 (7.34 – 52.03)	< <b>0.001</b>
Turkey	37.72 (14.06 – 101.19)	<0.001	38.10 (14.16 – 102.58)	< <b>0.001</b>
<b>Hospital size (large vs. small)</b>	1.81 (0.84 – 3.91)	0.13	1.00 (0.50 – 1.99)	1
<b>Sex (male vs. female)</b>	1.06 (0.88 – 1.28)	0.51	1.06 (0.87 – 1.28)	0.57
<b>Age (&gt;65 vs. ≤65 y)</b>	1.15 (0.95 – 1.39)	0.14	1.11 (0.90 – 1.37)	0.33
<b>Comorbidities (≥1 vs. none)</b>	1.37 (1.12 – 1.67)	0.002	1.36 (1.09 – 1.69)	<b>0.008</b>
<b>History of NVUGIB (yes vs. no)</b>	1.14 (0.88 – 1.48)	0.33	1.12 (0.86 – 1.46)	0.42
<b>Admission (acute vs. no)</b>	1.29 (1.00 – 1.67)	0.05	1.13 (0.86 – 1.49)	0.36
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.23 (1.00 – 1.50)	0.05	1.76 (1.38 – 2.23)	< <b>0.001</b>
Melena	1.42 (1.17 – 1.72)	<0.001	1.88 (1.49 – 2.37)	< <b>0.001</b>
Shock / syncope	1.15 (0.83 – 1.60)	0.41	1.21 (0.86 – 1.70)	0.27
Coffee ground vomit	1.23 (0.95 – 1.59)	0.12	1.72 (1.29 – 2.30)	< <b>0.001</b>
Blood up NG tube	1.20 (0.52 – 2.80)	0.67	1.39 (0.58 – 3.32)	0.46
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	1.10 (0.91 – 1.32)	0.32	1.02 (0.83 – 1.24)	0.88

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.

**Table 10.-** Determinants of performance of therapeutic procedures during endoscopy for NVUGIB.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	0.44 (0.23 - 0.85)	0.02	0.38 (0.19 - 0.75)	<b>0.007</b>
Italy	1.04 (0.58 – 1.88)	0.9	0.88 (0.48 - 1.62)	0.69
Norway	0.65 (0.38 – 1.11)	0.12	0.65 (0.37 - 1.11)	0.12
Portugal	0.55 (0.31 – 1.00)	0.05	0.54 (0.30 - 0.97)	<b>0.04</b>
Spain	1.32 (0.80 – 2.18)	0.28	1.14 (0.68 - 1.92)	0.62
Turkey	0.64 (0.39 – 1.06)	0.09	0.52 (0.30 - 0.91)	<b>0.02</b>
<b>Hospital size (large vs. small)</b>	1.25 (0.88 – 1.76)	0.21	1.16 (0.81 - 1.65)	0.42
<b>Sex (male vs. female)</b>	1.21 (1.0 – 1.4)	0.04	1.13 (0.94 - 1.36)	0.19
<b>Age (&gt;65 vs. ≤65 y)</b>	0.96 (0.81 – 1.14)	0.63	0.94 (0.77 – 1.15)	0.55
<b>Comorbidities (≥1 vs. none)</b>	1.20 (1.00 – 1.4)	0.06	1.29 (1.05 – 1.59)	<b>0.02</b>
<b>History of NVUGIB (yes vs. no)</b>	1.12 (0.89 - 1.40)	0.34	1.23 (0.97 - 1.56)	0.09
<b>Admission (acute vs. no)</b>	0.92 (0.71 – 1.18)	0.49	0.84 (0.64 – 1.10)	0.2
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.60 (1.3 - 1.92)	<0.001	2.05 (1.64 – 2.56)	<b>&lt;0.001</b>
Melena	1.11 (0.92 – 1.33)	0.28	1.22 (0.97 – 1.52)	0.09
Shock / syncope	1.46 (1.09 – 1.95)	0.01	1.24 (0.92 – 1.68)	0.16
Coffee ground vomit	0.68 (0.53 – 0.88)	<0.001	0.98 (0.75 - 1.30)	0.91
Blood up NG tube	1.21 (0.62 – 2.37)	0.58	1.26 (0.64 – 2.50)	0.51
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	1.11 (0.94 – 1.31)	0.22	1.07 (0.89 – 1.28)	0.47
<b>Lack of risk score (lacking vs. present)</b>	0.89 (0.63 – 1.27)	0.53	0.96 (0.66 – 1.39)	0.81
<b>Time to endoscopy (days)</b>	0.95 (0.92 – 0.99)	0.02	0.95 (0.92 – 0.99)	<b>0.02</b>
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	0.30 (0.21 – 0.42)	<0.001	0.32 (0.22 – 0.45)	<b>&lt;0.001</b>
Gastric ulcer	1.15 (0.95 – 1.37)	<0.001	1.49 (1.22 – 1.82)	<b>&lt;0.001</b>
Duod. ulcer	2.02 (1.70 – 2.40)	<0.001	2.44 (2.01 – 2.97)	<b>&lt;0.001</b>

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.

**Table 11.-** Determinants of bleeding continuation after initial NVUGIB episode.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	0.96 (0.45 – 2.03)	0.91	1.07 (0.47 - 2.40)	0.88
Italy	1.02 (0.52 – 1.99)	0.96	1.09 (0.53 - 2.23)	0.82
Norway	0.95 (0.50 -1.79)	0.87	1.00 (0.52 - 1.94)	1
Portugal	0.60 (0.29 – 1.23)	0.16	0.62 (0.30 - 1.28)	0.2
Spain	0.76 (0.41 – 1.41)	0.38	0.69 (0.36 - 1.35)	0.29
Turkey	0.75 (0.40 – 1.40)	0.37	0.97 (0.48 - 1.93)	0.93
<b>Hospital size (large vs. small)</b>	1.14 (0.77 – 1.68)	0.51	1.16 (0.74 – 1.80)	0.53
<b>Sex (male vs. female)</b>	1.42 (1.06 – 1.92)	0.02	1.46 (1.06 - 1.99)	<b>0.02</b>
<b>Age (&gt;65 vs. ≤65 y)</b>	1.39 (1.04 – 1.86)	0.02	1.40 (1.01 – 1.94)	<b>0.04</b>
<b>Comorbidities (≥1 vs. none)</b>	1.80 (1.29 – 2.52)	<0.001	1.80 (1.25 - 2.61)	<b>0.002</b>
<b>History of NVUGIB (yes vs. no)</b>	1.27 (0.90 -1.79)	0.17	1.28 (0.89 - 1.84)	0.18
<b>Admission (acute vs. no)</b>	0.56 (0.40 – 0.78)	<0.001	0.52 (0.36 - 0.75)	<b>0.001</b>
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.33 (0.99 – 1.78)	0.05	1.72 (1.21 - 2.43)	<b>0.002</b>
Melena	1.21 (0.89 – 1.64)	0.22	1.44 (1.01 - 2.06)	0.05
Shock / syncope	2.35 (1.59 – 3.47)	<0.001	2.28 (1.51 - 3.44)	<b>&lt;0.001</b>
Coffee ground vomit	0.78 (0.52 – 1.18)	0.24	1.28 (0.81 - 2.01)	0.29
Blood up NG tube	1.18 (0.45 – 3.14)	0.74	1.02 (0.38 - 2.77)	0.96
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	0.75 (0.57 – 0.99)	0.04	0.64 (0.48 - 0.86)	<b>0.003</b>
<b>Lack of risk score (lacking vs. present)</b>	1.06 (0.69 – 1.64)	0.78	1.12 (0.68 - 1.85)	0.65
<b>Time to endoscopy (days)</b>	0.96 (0.90 – 1.03)	0.3	0.95 (0.89 - 1.02)	0.15
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	0.33 (0.17 – 0.64)	0.001	0.33 (0.17 - 0.65)	<b>0.001</b>
Gastric ulcer	0.73 (0.53 – 1.00)	0.05	0.84 (0.60 - 1.19)	0.33
Duod. ulcer	1.78 (1.35 – 2.35)	<0.001	1.63 (1.21 - 2.22)	<b>0.002</b>

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.

**Table 12.-** Determinants of re-bleeding after initial NVUGIB episode.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	0.61 (0.32 – 1.18)	0.15	0.62 (0.31 - 1.24)	0.18
Italy	0.73 (0.43 – 1.25)	0.26	0.72 (0.40 - 1.28)	0.27
Norway	1.07 (0.65 – 1.74)	0.8	1.21 (0.73 - 2.00)	0.47
Portugal	0.52 (0.29 – 0.92)	0.03	0.55 (0.31 - 0.97)	<b>0.04</b>
Spain	0.73 (0.44 – 1.20)	0.21	0.64 (0.38 - 1.10)	0.11
Turkey	0.55 (0.33 – 0.92)	0.03	0.68 (0.38 - 1.21)	0.19
<b>Hospital size (large vs. small)</b>	1.15 (0.82 – 1.60)	0.43	1.39 (0.97 - 1.99)	0.08
<b>Sex (male vs. female)</b>	1.25 (0.96 – 1.63)	0.1	1.32 (1.00 - 1.74)	0.05
<b>Age (&gt;65 vs. ≤65 y)</b>	1.66 (1.27 – 2.17)	<0.001	1.66 (1.23 - 2.24)	<b>0.001</b>
<b>Comorbidities (≥1 vs. none)</b>	1.64 (1.22 – 2.21)	0.001	1.42 (1.02 - 1.97)	<b>0.04</b>
<b>History of NVUGIB (yes vs. no)</b>	1.43 (1.05 – 1.95)	0.02	1.58 (1.14 - 2.18)	<b>0.006</b>
<b>Admission (acute vs. no)</b>	0.56 (0.41 – 0.76)	<0.001	0.55 (0.39 - 0.77)	<b>0.001</b>
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.30 (1.00 – 1.70)	0.05	1.65 (1.20 - 2.26)	<b>0.002</b>
Melena	1.06 (0.81 – 1.39)	0.67	1.20 (0.87 - 1.65)	0.27
Shock / syncope	2.10 (1.47 – 3.02)	<0.001	2.10 (1.43 - 3.06)	<b>&lt;0.001</b>
Coffee ground vomit	0.79 (0.54 – 1.16)	0.23	1.14 (0.75 - 1.73)	0.54
Blood up NG tube	1.03 (0.38 – 2.78)	0.96	0.93 (0.33 - 2.56)	0.88
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	0.88 (0.69 – 1.13)	0.09	0.78 (0.60 - 1.02)	0.07
<b>Lack of risk score (lacking vs. present)</b>	1.24 (0.85 – 1.81)	0.68	1.15 (0.76 - 1.75)	0.5
<b>Time to endoscopy (days)</b>	0.93 (0.86 – 1.00)	0.05	0.92 (0.85 - 0.99)	<b>0.02</b>
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	0.48 (0.29 – 0.80)	0.001	0.48 (0.29 - 0.82)	<b>0.007</b>
Gastric ulcer	0.94 (0.71 – 1.23)	0.63	1.12 (0.83 - 1.51)	0.48
Duod. ulcer	1.75 (1.36 – 2.30)	<0.001	1.80 (1.36 - 2.38)	<b>&lt;0.001</b>

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.

**Table 13.-** Determinants of performance of additional endoscopies.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	0.17 (0.87 – 0.35)	<0.001	0.13 (0.06 - 0.27)	<b>&lt;0.001</b>
Italy	0.37 (0.20 – 0.69)	<0.01	0.30 (0.15 - 0.57)	<b>&lt;0.001</b>
Norway	0.22 (0.12 – 0.39)	<0.001	0.20 (0.11 - 0.37)	<b>&lt;0.001</b>
Portugal	0.35 (0.19 – 0.65)	<0.01	0.32 (0.17 - 0.59)	<b>&lt;0.001</b>
Spain	0.31 (0.19 – 0.53)	<0.001	0.23 (0.13 - 0.40)	<b>&lt;0.001</b>
Turkey	0.10 (0.06 – 0.18)	<0.001	0.09 (0.05 - 0.16)	<b>&lt;0.001</b>
<b>Hospital size (large vs. small)</b>	1.09 (0.71 – 1.67)	0.7	1.36 (0.92 - 2.00)	0.12
<b>Sex (male vs. female)</b>	1.08 (0.89 – 1.30)	0.43	1.13 (0.93 - 1.38)	0.22
<b>Age (&gt;65 vs. ≤65 y)</b>	1.15 (0.96 – 1.39)	0.14	1.14 (0.93 - 1.41)	0.22
<b>Comorbidities (≥1 vs. none)</b>	1.30 (1.06 – 1.58)	0.01	1.23 (0.98 - 1.54)	0.07
<b>History of NVUGIB (yes vs. no)</b>	1.17 (0.92 – 1.49)	0.2	1.29 (1.01 - 1.66)	<b>0.04</b>
<b>Admission (acute vs. no)</b>	0.91 (0.70 – 1.18)	0.48	0.89 (0.67 - 1.17)	0.41
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.53 (1.26 – 1.9)	<0.001	1.98 (1.56 - 2.50)	<b>&lt;0.001</b>
Melena	1.03 (0.85 – 1.24)	0.8	1.32 (1.05 - 1.67)	<b>0.02</b>
Shock / syncope	2.25 (1.67 – 3.04)	<0.001	2.15 (1.58 - 2.93)	<b>&lt;0.001</b>
Coffee ground vomit	1.01 (0.78 – 1.32)	0.91	1.55 (1.16 - 2.07)	<b>0.003</b>
Blood up NG tube	1.37 (0.69 – 2.70)	0.37	1.32 (0.66 - 2.66)	0.44
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	1.01 (0.85 – 1.21)	0.88	0.94 (0.77 - 1.14)	0.51
<b>Lack of risk score (lacking vs. present)</b>	1.52 (0.99 – 2.34)	0.05	1.00 (0.66 - 1.52)	1
<b>Time to endoscopy (days)</b>	0.98 (0.95 – 1.02)	0.29	0.98 (0.95 - 1.02)	0.33
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	0.59 (0.43 – 0.80)	<0.001	0.59 (0.42 - 0.82)	<b>0.002</b>
Gastric ulcer	1.79 (1.47 – 2.16)	<0.001	2.01 (1.63 - 2.49)	<b>&lt;0.001</b>
Duod. ulcer	1.12 (0.93 – 1.35)	0.24	1.47 (1.19 - 1.81)	<b>&lt;0.001</b>

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.

**Table 14.-** Determinants of development of clinical complications during NVUGIB episode.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	0.50 (0.21 – 1.19)	0.12	0.51 (0.20 - 1.27)	0.15
Italy	0.41 (0.19 -0.89)	0.03	0.42 (0.19 - 0.96)	<b>0.04</b>
Norway	0.60 (0.30 -1.19)	0.15	0.74 (0.37 - 1.49)	0.4
Portugal	1.20 (0.61 – 2.37)	0.6	1.34 (0.67 - 2.67)	0.42
Spain	1.10 (0.60 – 2.01)	0.76	1.17 (0.61 - 2.23)	0.64
Turkey	0.54 (0.28 – 1.04)	0.07	0.75 (0.36 - 1.56)	0.45
<b>Hospital size (large vs. small)</b>	1.29 (0.83 – 1.99)	0.27	1.54 (0.97 - 2.44)	0.07
<b>Sex (male vs. female)</b>	0.89 (0.68 – 1.2)	0.39	0.94 (0.70 - 1.26)	0.68
<b>Age (&gt;65 vs. ≤65 y)</b>	1.99 (1.47 – 2.67)	<0.001	1.73 (1.24 - 2.42)	<b>0.001</b>
<b>Comorbidities (≥1 vs. none)</b>	2.83 (1.95 – 4.10)	<0.001	2.51 (1.67 - 3.79)	<b>&lt;0.001</b>
<b>History of NVUGIB (yes vs. no)</b>	1.05 (0.74 – 1.48)	0.79	1.01 (0.69 - 1.46)	0.97
<b>Admission (acute vs. no)</b>	0.57 (0.40 -0.80)	<0.01	0.71 (0.49 - 1.04)	0.08
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.41 (1.06 – 1.86)	0.02	1.45 (1.03 - 2.04)	<b>0.04</b>
Melena	0.75 (0.57 – 0.99)	0.05	0.91 (0.65 - 1.27)	0.57
Shock / syncope	2.35 (1.60 – 3.46)	<0.001	2.54 (1.68 - 3.85)	<b>&lt;0.001</b>
Coffee ground vomit	0.94 (0.65 – 1.37)	0.75	1.19 (0.77 - 1.84)	0.44
Blood up NG tube	2.11 (0.90 – 4.96)	0.09	1.84 (0.75 - 4.55)	0.19
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	0.81 (0.62 – 1.05)	0.11	0.66 (0.50 - 0.89)	<b>0.006</b>
<b>Lack of risk score (lacking vs. present)</b>	1.36 (0.84 – 2.20)	0.21	0.99 (0.59 - 1.67)	0.98
<b>Time to endoscopy (days)</b>	1.04 (1.01 – 1.08)	0.02	1.04 (1.00 - 1.08)	0.07
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	1.07 (0.70 – 1.64)	0.74	1.03 (0.66 - 1.63)	0.89
Gastric ulcer	0.83 (0.62 – 1.12)	0.23	0.84 (0.60 - 1.16)	0.29
Duod. ulcer	1.09 (0.83 – 1.44)	0.53	1.13 (0.83 - 1.54)	0.44

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.

**Table 15.-** Determinants of performance of surgery within 30 days of NVUGIB episode.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	1.31 (0.48 – 3.62)	0.6	1.43 (0.49 - 4.19)	0.52
Italy	1.09 (0.43 – 2.78)	0.85	1.01 (0.38 - 2.68)	0.98
Norway	1.08 (0.45 – 2.63)	0.86	1.23 (0.51 - 2.99)	0.64
Portugal	0.81 (0.30 -2.13)	0.66	0.83 (0.32 - 2.13)	0.69
Spain	1.35 (0.60 -3.07)	0.47	1.24 (0.53 - 2.90)	0.62
Turkey	0.84 (0.35 – 2.01)	0.69	0.94 (0.36 - 2.44)	0.89
<b>Hospital size (large vs. small)</b>	1.30 (0.76 – 2.21)	0.34	1.21 (0.67 - 2.20)	0.53
<b>Sex (male vs. female)</b>	0.93 (0.64 – 1.35)	0.7	0.89 (0.59 - 1.33)	0.56
<b>Age (&gt;65 vs. ≤65 y)</b>	1.19 (0.87 – 1.73)	0.37	1.48 (0.95 - 2.32)	0.09
<b>Comorbidities (≥1 vs. none)</b>	0.86 (0.59 – 1.27)	0.45	0.91 (0.57 - 1.44)	0.68
<b>History of NVUGIB (yes vs. no)</b>	0.87 (0.53 – 1.44)	0.59	0.90 (0.52 - 1.55)	0.7
<b>Admission (acute vs. no)</b>	0.80 (0.49 – 1.31)	<0.001	0.90 (0.51 - 1.59)	0.72
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	2.00 (1.39 – 2.88)	<0.001	1.75 (1.10 - 2.77)	<b>0.02</b>
Melena	0.61 (0.43 – 0.89)	<0.01	0.73 (0.46 - 1.16)	0.19
Shock / syncope	2.46 (1.52 – 3.97)	<0.001	2.22 (1.32 - 3.75)	<b>0.003</b>
Coffee ground vomit	0.49 (0.25 – 0.94)	0.03	0.70 (0.34 - 1.47)	0.35
Blood up NG tube	4.47 (1.90 – 10.51)	<0.001	3.82 (1.52 - 9.60)	<b>0.005</b>
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	0.46 (0.32 – 0.67)	<0.001	0.44 (0.29 - 0.67)	<b>&lt;0.001</b>
<b>Lack of risk score (lacking vs. present)</b>	1.17 (0.65 – 2.09)	0.61	1.15 (0.59 - 2.22)	0.69
<b>Time to endoscopy (days)</b>	1.00 (0.93 – 1.08)	0.98	1.01 (0.94 - 1.09)	0.83
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	0.18 (0.05 – 0.59)	<0.01	0.18 (0.05 - 0.63)	<b>0.008</b>
Gastric ulcer	0.86 (0.57 – 1.30)	0.48	0.93 (0.58 - 1.48)	0.76
Duod. ulcer	1.31 (0.90 -1.90)	0.15	1.42 (0.92 - 2.19)	0.11

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.



**Table 16.-** Determinants of mortality within 30 days of NVUGIB episode.

Characteristic	Univariate analysis		Multivariable analysis*	
	Odds ratio (95 % CI)	P-value	Odds Ratio (95 % CI)	P-value
<b>Country</b>				
Belgium (reference)	1	–	1	–
Greece	0.29 (0.11 – 0.76)	0.01	0.20 (0.06 - 0.66)	<b>0.009</b>
Italy	0.66 (0.35 – 1.26)	0.21	0.74 (0.30 - 1.85)	0.53
Norway	0.81 (0.45 – 1.47)	0.49	0.61 (0.28 - 1.36)	0.23
Portugal	0.59 (0.31 – 1.14)	0.12	0.38 (0.15 - 0.93)	<b>0.04</b>
Spain	0.42 (0.21 – 0.81)	0.01	0.47 (0.21 - 1.09)	0.08
Turkey	0.33 (0.16 – 0.66)	0.002	0.44 (0.18 - 1.08)	0.08
<b>Hospital size (large vs. small)</b>	0.84 (0.56 – 1.27)	0.42	1.00 (0.58 - 1.74)	1
<b>Sex (male vs. female)</b>	0.88 (0.64 – 1.22)	0.45	0.91 (0.67 - 1.23)	0.55
<b>Age (&gt;65 vs. ≤65 y)</b>	1.81 (1.27 – 2.57)	< 0.001	1.44 (1.02 - 2.02)	<b>0.04</b>
<b>Comorbidities (≥1 vs. none)</b>	6.22 (3.48 – 11.12)	< 0.001	5.24 (3.10 - 8.86)	<b>&lt;0.001</b>
<b>History of NVUGIB (yes vs. no)</b>	1.06 (0.70 – 1.61)	0.79	0.98 (0.66 - 1.46)	0.94
<b>Admission (acute vs. no)</b>	0.37 (0.26 – 0.54)	< 0.001	0.47 (0.33 - 0.67)	<b>&lt;0.001</b>
<b>Symptoms (yes vs. no)</b>				
Fresh red blood hematemesis	1.47 (1.06 – 2.04)	0.02	1.41 (0.99 - 2.01)	0.06
Melena	0.71 (0.51 – 0.98)	0.04	0.85 (0.60 - 1.20)	0.35
Shock / syncope	2.55 (1.66 – 3.94)	< 0.001	2.54 (1.64 - 3.93)	<b>&lt;0.001</b>
Coffee ground vomit	1.11 (0.73 – 1.70)	0.63	1.67 (1.07 - 2.59)	<b>0.02</b>
Blood up NG tube	0.97 (0.26 – 3.58)	0.97	0.54 (0.16 - 1.78)	0.31
<b>Use of aspirin, NSAIDs or warfarin at baseline (yes vs. no)</b>	0.52 (0.38 – 0.72)	< 0.001	0.36 (0.26 - 0.49)	<b>&lt;0.001</b>
<b>Lack of risk score (lacking vs. present)</b>	2.18 (1.28 – 3.73)	0.004	2.10 (1.08 - 4.10)	<b>0.03</b>
<b>Time to endoscopy (days)</b>	1.02 (0.98 – 1.08)	0.32	0.99 (0.95 - 1.04)	0.82
<b>Endoscopic diagnosis (yes vs. no)</b>				
Esophagitis	1.01 (0.61 – 1.68)	0.98	0.99 (0.61 - 1.63)	0.98
Gastric ulcer	1.12 (0.80 – 1.56)	0.52	1.23 (0.88 - 1.70)	0.22
Duod. ulcer	1.19 (0.86 – 1.64)	0.3	1.27 (0.91 - 1.75)	0.16
<b>Transfusion within 12 h. of presentation</b>				
Intravenous fluid (yes vs. no)	2.73 (1.77 – 4.20)	< 0.001	2.92 (1.87 - 4.57)	<b>&lt;0.001</b>
Red blood cell (yes vs. no)	3.19 (2.26 – 4.50)	< 0.001	2.14 (1.51 - 3.02)	<b>&lt;0.001</b>
Other (yes vs. no)	3.12 (2.12 – 4.60)	< 0.001	2.89 (1.95 - 4.28)	<b>&lt;0.001</b>

All models are random intercept logistic regression models with centers as random effects.

\* Multivariable adjusted: adjusted for other variables in the Table.