# Indiana University



Ito, 2017	0.263	(0.065,	0.461)	5
Nyuzuki, 2013	0.200	(0.067,	0.333)	7
Shimada, 2015	0.087	(0.006,	0.168)	4
Tajima, 2020	0.088	(0.042,	0.133)	13
Toya, 2016	0.209	(0.125,	0.292)	19

Overall (1^2=61.14 %, P=0.036) 0.146 (0.081, 0.212) 48/339

B) Studies		late (954	& C.I.)	
Overall	0.146	(0.081,	0.212)	-
- Ito, 2017 - Shimada, 2015 - Tajima, 2020	0.135 0.170 0.172	(0.065, (0.069, (0.083, (0.095, (0.059,	0.201) 0.257) 0.250)	



Estimate (95% C.I.) Ev/Trt

Nyuzuki, 2013	0.062	(0.000,	0.230)	
Ito, 2017	0.917	(0.696,	1.000)	
Tajima, 2020	0.964	(0.867,	1.000)	1
Toya, 2016	0.947	(0.847,	1.000)	1

Overall (1^2=96.79 %, P< 0.001) 0.725 (0.356, 1.094)

#### (D) Studies

Estimate (95% C.I.) Ev/Trt

Nyuzuki, 2013	0.938	(0.770,	1.000)
Ito, 2017	0.083	(0.000,	0.304)
Tajima, 2020	0.036	(0.000,	0.133)
Toya, 2016	0.105	(0.000,	0.243)

Overall (I^2=96.59 %, P< 0.001) 0.289 (-0.107, 0.686)

## Prevalence of Dabigatran-Induced Esophagitis on Upper Gastrointestinal **Endoscopy: A Systematic Review and Meta-Analysis**

Azizullah A. Beran, Mohammed Mhanna, Mouhand F. Mohamed, Rami Musallam, Wasef Sayeh, Ziad Abuhelwa, Justin Chuang, Sabeen Sidiki, Yasir Al-Abboodi, Ragheb Assaly



#### Introduction

- Dabigatran-induced esophagitis (DIE) has been reported increasingly recently in the literature.
- However, the exact prevalence of DIE is uncertain.
- Therefore, we performed a systematic review and meta-analysis to define and provide a quantitative assessment of the prevalence of DIE on endoscopy.

### **Methods and Materials**

- A comprehensive literature search of PubMed/Medline, Embase, and Web of Science was conducted on April 01, 2022, to include all studies that reported the prevalence of DIE among patients undergoing upper endoscopy.
- Two independent reviewers (AB and RM) screened and shortlisted articles and performed data extraction.
- Any discrepancy was resolved by consensus.
- The statistical analysis was performed using Open Meta Analyst (CEBM, Oxford, UK).
- Pooled event rate and corresponding 95% confidence intervals (CI) were calculated using the random-effects model and DerSimonian Laird method.
- Heterogeneity was assessed using the Higgins I2 index (I2 values >50% implied the presence of significant heterogeneity).

#### Results

- Five retrospective cohort studies with 339 patients were included.
- All studies originated from Japan.
- The pooled prevalence rate of DIE was 15.5% (95% CI 0.096-0.239, I2=62.4%, Figure 1A).
- A leave-one-out sensitivity analysis showed similar results (Figure 1B).
- Four studies reported the detailed endoscopic features of DIE.
- All DIE occurred in the mid and/or lower esophagus.
- Longitudinal mucosal casts were the most common endoscopic feature, with a pooled rate of 82.2% (95% CI 0.254-0.984, I2=74.8%, Figure 1C).
- The pooled rate of mucosal erosions was 20.5% (95% CI 0.025-0.725, I2=72.5%, Figure 1D).

### Conclusions

- Nearly 15% of patients receiving dabigatran were found to have dabigatran-induced esophagitis on endoscopy.
- Physicians should be cautious about using dabigatran in patients with a history of esophagitis or gastroesophageal reflux disease.
- Patients who receive dabigatran should undergo an upper endoscopy to evaluate for DIE if they develop gastrointestinal symptoms.
- Prospective, large-scale, multicenter studies are needed to further understand DIE.