Reply to: *Helicobacter pylori* eradication treatment and the risk of gastric adenocarcinoma in a western population

We recently discovered that we used a suboptimal method for a part of our statistical analyses in our paper published recently in Gut. This has affected the duration analyses (time since eradication of Helicobacter pylori) and associated risk of gastric cancer. Previously, we only assessed the risk of gastric cancer in those eradicated during the selected follow-up periods, and disregarded the other individuals who ideally should also have contributed person-time. Therefore, person-time was underestimated in the first follow-up period, leading to a (biased) overestimation of the number of cases relative to the person-time, and therefore showed too high-risk estimates of gastric cancer. In the latter time intervals, too much follow-up time was included, that is, years that the individual could not develop cancer because of our inclusion criteria for these specific analyses.

We have now rerun the analysis using the same cohort. As seen in tables 1 and 2, the results did not change dramatically compared with the results presented before, but the estimates are less extreme compared with the original method. Previously, we also reported an unexpected lower risk of gastric cancer in individuals who were eradicated at least 5 years earlier compared with the background population, which was not confirmed in the corrected analyses. Thus, as presented in table 1, the risk of gastric cancer does still decrease over time since eradication, but does not become lower than the overall risk of gastric cancer in Sweden, standardised for age, sex and calendar period.

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PostScript

Table 1 Risk of gastric and non-cardia gastric adenocarcinoma in individuals receiving *Helicobacter pylori* eradication treatment in Sweden from 2005 to 2012 compared with the Swedish standard population, expressed as standardised incidence ratio (SIR) with 95% CI

	Gastric adenocarcinoma		Non-cardia gastric adenocarcinoma		Cardia adenocarcinoma				
	Number of cases	SIR (95% CI)	Number of cases	SIR (95% CI)	Number of cases	SIR (95% CI)			
Total	75	2.08 (1.63 to 2.60)	69	2.64 (2.06 to 3.35)	6	0.60 (0.22 to 1.30)			
Follow-up time, years									
1–3	48	3.39 (2.50 to 4.50)	43	4.20 (3.04 to 5.66)	5	1.28 (0.41 to 2.98)			
3–5	21	2.32 (1.44 to 3.55)	20	3.08 (1.88 to 4.76)	1	0.39 (0.00 to 2.19)			
5–7.5	6	1.48 (0.54 to 3.21)	6	2.06 (0.75 to 4.48)	0	NA			
No of eradications									
1	61	1.88 (1.44 to 2.41)	56	2.38 (1.80 to 3.10)	5	0.56 (0.18 to 1.30)			
2	8	2.84 (1.22 to 5.59)	7	3.45 (1.38 to 7.11)	1	1.26 (0.02 to 7.02)			
>2	6	7.44 (2.72 to 16.19)	6	10.47 (3.82 to 22.78)	0	NA			

NA, not available

Table 2 Risk of gastric adenocarcinoma in individuals receiving *Helicobacter pylori* eradication treatment in Sweden from 2005 to 2012 compared with the Swedish standard population stratified by sex, age and calendar period, expressed as standardised incidence ratio (SIR) with 95% CI

Time after eradication										
	1–3 years		3–5 years		5–7.5 years					
	Number	SIR (95% CI)	Number	SIR (95% CI)	Number	SIR (95% CI)				
Total	48	3.39 (2.50 to 4.50)	21	2.32 (1.44 to 3.55)	6	1.48 (0.54 to 3.21)				
Sex										
Men	24	2.76 (1.77 to 4.11)	13	2.38 (1.26 to 4.06)	4	1.64 (0.44 to 4.21)				
Women	24	4.40 (2.82 to 6.55)	8	2.25 (0.97 to 4.43)	2	1.23 (0.14 to 4.43)				
Age, years										
18–59	14	8.68 (4.74 to 14.57)	4	4.28 (3.94 to 5.00)	0	NA				
60-69	8	2.16 (2.07 to 2.34)	4	1.61 (1.48 to 1.88)	1	0.87 (0.61 to 1.47)				
≥70	26	2.95 (2.90 to 3.02)	13	2.31 (2.26 to 2.43)	5	1.97 (0.84 to 2.24)				

NA, not available.

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REFERENCE

1 Doorakkers E, Lagergren J, Engstrand L, et al. Helicobacter pylori eradication treatment and the risk of gastric adenocarcinoma in a Western population. Gut 2018;67:2092–6.

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