

The Impact of Endoscopic Screening Programs for Gastric Cancer in Japan

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Background

- Radiographic screening for gastric cancer (GC) has been a national program in Japan since 1983. Endoscopic screening was added in 2016, and approximately half of all the municipalities have already introduced it.
- Since the implementation of cancer screening is delegated to local municipalities, regional disparities exist in the adoption of endoscopic screening, even at the prefecture level.
- Nationwide, the incidence and mortality rates of GC have decreased over the past decade, but the impact of endoscopic screening remains unclear.

Objective

The impact of endoscopic screening was evaluated in Fukui Prefecture, where it was introduced simultaneously across all municipalities in 2016.

Methods

- The incidence and mortality rates of GC were evaluated before and after the introduction of endoscopic screening in Fukui Prefecture.
- Age-standardized rates (ASRs) for individuals under 75 years of age were calculated using annual reports of the national vital statistics and cancer registry. The pre-introduction period was defined as 2011 to 2015, and the post-introduction period as 2016 to 2020.
- Annual percentage decreases were compared for all causes, all cancers along with GC mortality and incidence rates.

Results

After 2016, the ASRs of GC incidence decreased steeply, while the ASRs of GC mortality gradually declined after 2016. The annual percentage decrease in GC incidence was 2.0% during the pre-introduction period and 5.2% during the post-introduction period. The annual percentage decrease for GC mortality was changed from 3.6% to 5.6%. Although the annual percentage decrease in all-cause mortality rates was similar between the two periods, it was larger in all cancer mortality in the post-introduction period.

Table 1. Decrease rate of ASRs in Fukui Prefecture

	Age-standardized rates below 75 years (/100,000)				Annual percent change	
	2011	2015	2016	2021	Before the introduction of endoscopic screening (%)	After the introduction of endoscopic screening (%)
					2011-2015	2016-2020
Gastric cancer incidence	35.2	31.6	32.4	22.2	2.0%	5.2%
Gastric cancer mortality	10.6	8.7	8.5	5.6	3.6%	5.6%
All cancer mortality	74.3	71.1	71.8	60.2	0.8%	2.7%
All-causes mortality	152.9	139.1	148.1	136.6	1.8%	1.3%

Figure 1. Cumulative participants in endoscopic screening in Fukui Prefecture

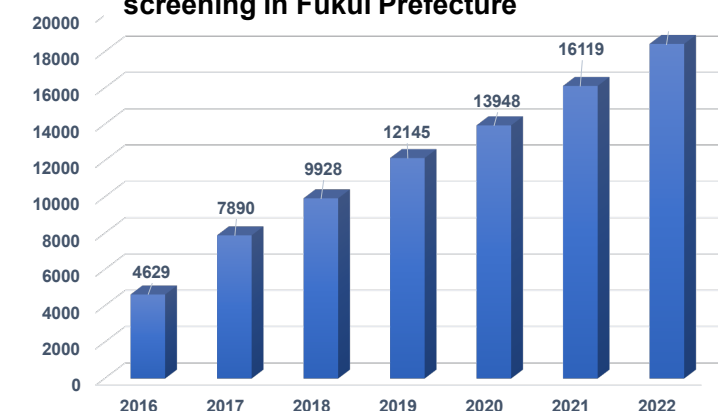
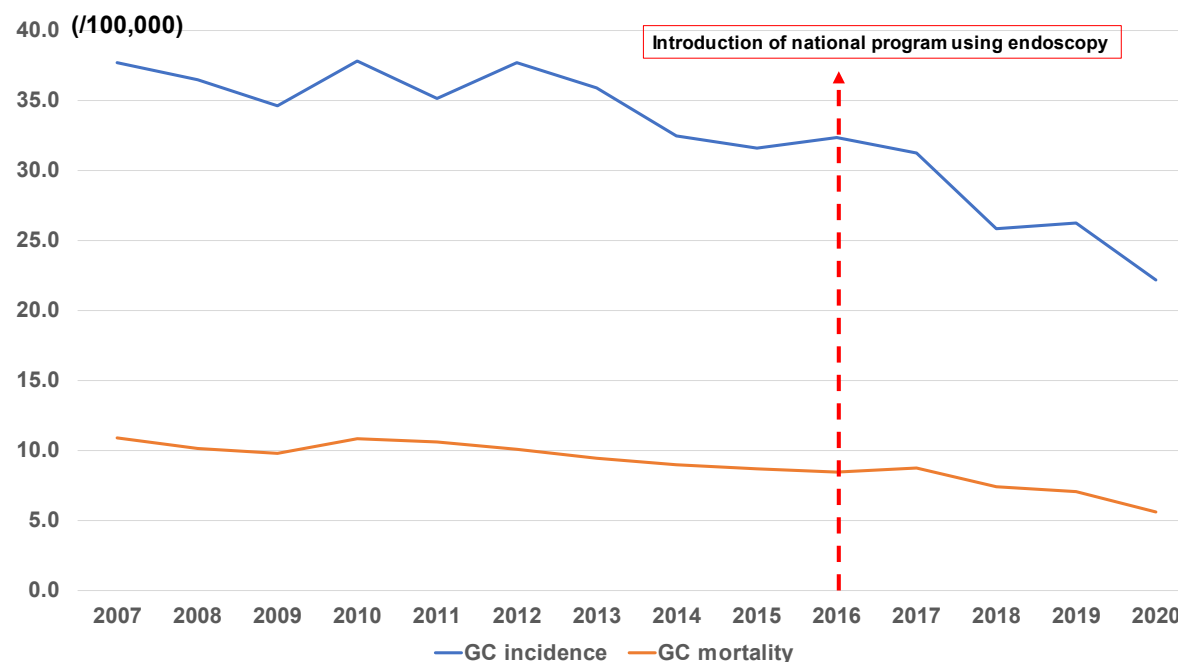


Figure 2. The trend of age-standardized incidence and mortality rates below 75 years for gastric cancer in Fukui Prefecture



Conclusion

In Fukui prefecture, a more rapid decrease in gastric cancer mortality has been observed following the introduction of endoscopic screening, suggesting its potential effectiveness. However, the long-term impact should be reevaluated, considering the time-lag effect associated with cancer screening.