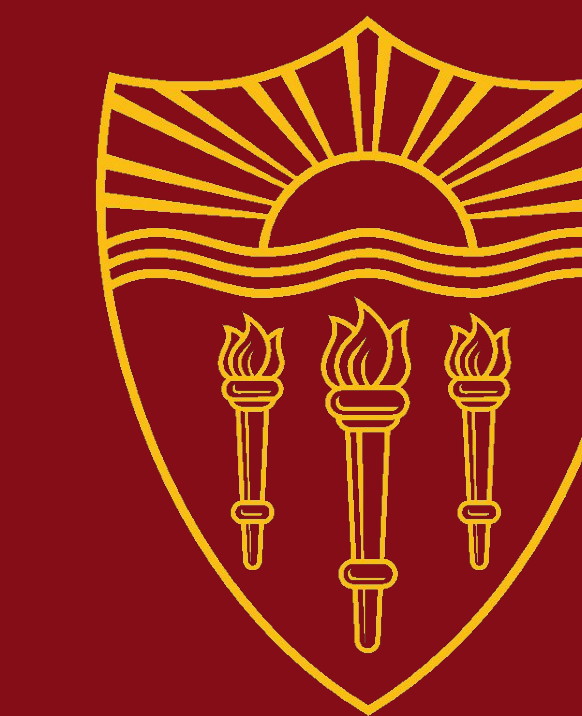




Obesity as a Risk Factor for Gastric Cancer in a Diverse Population: Investigating the Multiethnic Cohort

Niharika Mallepally MD MPH¹, Tiffany Lim MS², Brian Huang PhD², Wendy Setiawan PhD²

¹Division of Gastroenterology, ²Keck School of Medicine, Los Angeles, CA, USA



Background

- Gastric cancer (GC): 5th most common & 3rd deadliest cancer.
- Cardia GC are rising, perhaps due to obesity.
- Research on the association between obesity & gastric cancer has focused primarily on white populations.
- An assessment of obesity and gastric cancer risk in ethnically diverse populations is needed.

Methods

- The Multiethnic Cohort (MEC) is a population-based prospective study that has followed ~215,000 participants since the early 1990s.
- Gastric cancer (GC) cases were identified from linkages to tumor registries in California and Hawaii.
- Self-reported metrics obtained from questionnaire at baseline:
 - Body mass index (BMI)
 - Weight
 - Smoking
 - Alcohol consumption
 - Family history of GC
- Hazard ratios (HR) and 95% confidence intervals (CI) were calculated via Cox proportional hazards models to estimate the association between anthropometric variables and GC incidence by tumor site.

Association of BMI, weight change, and GC type

	Cardia		Non-cardia	
	Cases	HR (95% CI)	Cases	HR (95% CI)
BMI at age 21 per 5kg/m ²	192	1.41 (1.14, 1.75)	779	0.92 (0.81, 1.05)
BMI at baseline per 5kg/m ²	192	1.29 (1.10, 1.52)	779	0.93 (0.85, 1.02)
BMI change per 5kg/m ²	192	1.10 (0.91, 1.32)	779	0.96 (0.88, 1.06)
BMI change				
> -5 kg/m ²	0	0	7	1.65 (0.78, 3.49)
-5 to 5 kg/m ²	119	1.00	491	1.00
5 to 10 kg/m ²	58	1.07 (0.78, 1.48)	226	1.00 (0.85, 1.17)
10 to 15 kg/m ²	10	1.01 (0.52, 1.95)	40	0.86 (0.62, 1.20)
>15 kg/m ²	5	2.12 (0.85, 5.32)	15	1.15 (0.68, 1.94)
BMI rate of change (kg/m ² per year)	192	1.65 (0.42, 6.52)	779	0.44 (0.22, 0.92)
Weight at age 21 per 10 lbs	192	1.11 (1.04, 1.17)	779	0.95 (0.91, 0.99)
Weight at baseline per 10 lbs	192	1.08 (1.03, 1.13)	779	0.96 (0.94, 0.99)
Weight change per 10 lbs	192	1.03 (0.97, 1.09)	779	0.98 (0.95, 1.01)
Weight change				
> -10 lbs	5	0.52 (0.21, 1.31)	30	1.04 (0.70, 1.54)
-10 to 10 lbs	47	1.00	151	1.00
10 to 30 lbs	58	0.57 (0.38, 0.83)	302	0.95 (0.78, 1.16)
30 to 50 lbs	52	0.78 (0.52, 1.17)	184	0.94 (0.75, 1.17)
>50 lbs	30	0.74 (0.46, 1.19)	112	0.91 (0.70, 1.18)
Weight rate of change (10lbs per year)	192	1.08 (0.87, 1.34)	779	0.86 (0.77, 0.97)

BMI and weight at baseline and at age 21 are associated with higher risk of cardia gastric cancer.

Results & Discussion

- 1458 GC cases (192 cardia, 779 non-cardia) amongst 166,505 participants. In cases, mean age at cohort entry was 63.8 years and at time of diagnosis was 75.6 years.
- GC patients were male (59.7%), Japanese (47.6%) or Latino (22.1%), former smokers (44.5%), without family GC history (89%), no daily alcohol intake (52.1%).
- No statistically significant trends in overall GC incidence based on weight or BMI.
- Significantly higher risk of cardia GC with:
 - ↑ BMI at age 21 (HR 1.41, 95% CI 1.14-1.75)
 - BMI at baseline (HR 1.29, 95% CI 1.1-1.52)
 - Weight at age 21 (HR 1.11, 95% CI 1.04-1.17)
 - Weight at baseline (HR 1.08, 95% CI 1.03-1.13)
- Decreased NCGC Risk Associated with:
 - ↑ Weight at age 21 (HR 0.95, 95% CI 0.91-0.99)
 - Weight at baseline (HR 0.96, 95% CI 0.94-0.99)
 - BMI rate of change (HR 0.44, 95% CI 0.22-0.92)
 - Weight rate of change (HR 0.86, 95% 0.77-0.97)
- Results were similar in a sensitivity analysis

Reference & Acknowledgement

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