Association Between Vision Loss and Receipt of Screening Mammography Among Women in Medicare

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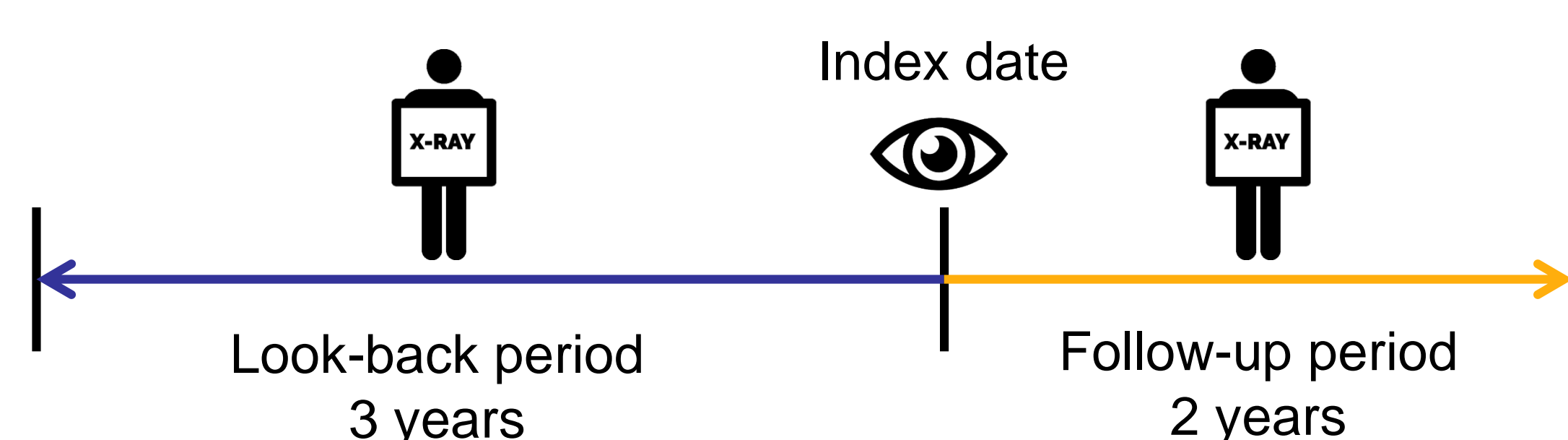University of Michigan
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BACKGROUND

- Timely receipt of mammograms in accordance with the United States Preventive Services Task Force (USPSTF) recommendations to screen for breast cancer can substantially reduce morbidity and mortality.[1]

- USPSTF guidelines recommend biennial screening mammography for women aged 50-74 years.[2]

- It may be challenging for persons with visual impairment to receive preventative screening services, such as mammograms.

PURPOSE

With 4 million adults in the US with visual impairment and projections of at least 7 million more by 2050[3], we sought to assess whether rates and odds of receiving screening mammograms are similar for women with versus without visual impairment and to compare whether screening rates differ among women with partial vs. severe vision loss.

METHODS

- Inclusion criteria: females aged 65-72 years, 20% Medicare sample 2008-2015, with continuous enrollment in fee-for-service Medicare for 5+ years

- Patients were divided into 3 groups:

  No vision loss (NVL) - no visual impairment in either eye

  Partial vision loss (PVL) - visual impairment involving 1 eye

  Severe vision loss (SVL) - visual impairment involving both eyes

- Groups were matched 1:1:1 by age, race, year at index date, urbanicity, and CCI score, a measure of overall health. Receipt of mammography was identified using CPT and HCPCS billing codes.

- Exclusion criteria: prior diagnosis of breast cancer or treatment during the look-back period

- Multivariable conditional logistic regression modeling determined whether the odds of receiving screening mammography differed among the 3 groups.

Index date

Look-back period 3 years | Follow-up period 2 years

RESULTS

Table 1. Characteristics of study population: females aged 65-72 years enrolled in Medicare, 2008-2015.

	Women with NVL (n=348)	Women with PVL (n=348)	Women with SVL (n-348)
Age at index date, mean ± SD	68.9 ± 1.5	69.0 ± 1.5	69.0 ± 1.5
Charlson Index, mean ± SD	3.6 ± 2.0	3.3 ± 2.3	3.3 ± 2.3
Race, n (%)			
White	285 (81.9)	285 (81.9)	285 (81.9)
Black	51 (14.7)	51 (14.7)	51 (14.7)
Latino	2 (0.6)	2 (0.6)	2 (0.6)
Asian	4 (1.2)	4 (1.2)	4 (1.2)
Other	6 (1.7)	6 (1.7)	6 (1.7)
Community of Residence, n (%)			
Urban	252 (72.4)	252 (72.4)	252 (72.4)
Large rural	49 (14.1)	49 (14.1)	49 (14.1)
Small rural	47 (13.5)	47 (13.5)	47 (13.5)

Figure 1. Proportion of women with NVL, PVL, and SVL receiving ≥1 mammogram in the 3-year look-back, 2-year follow-up, and overall 5-year study periods
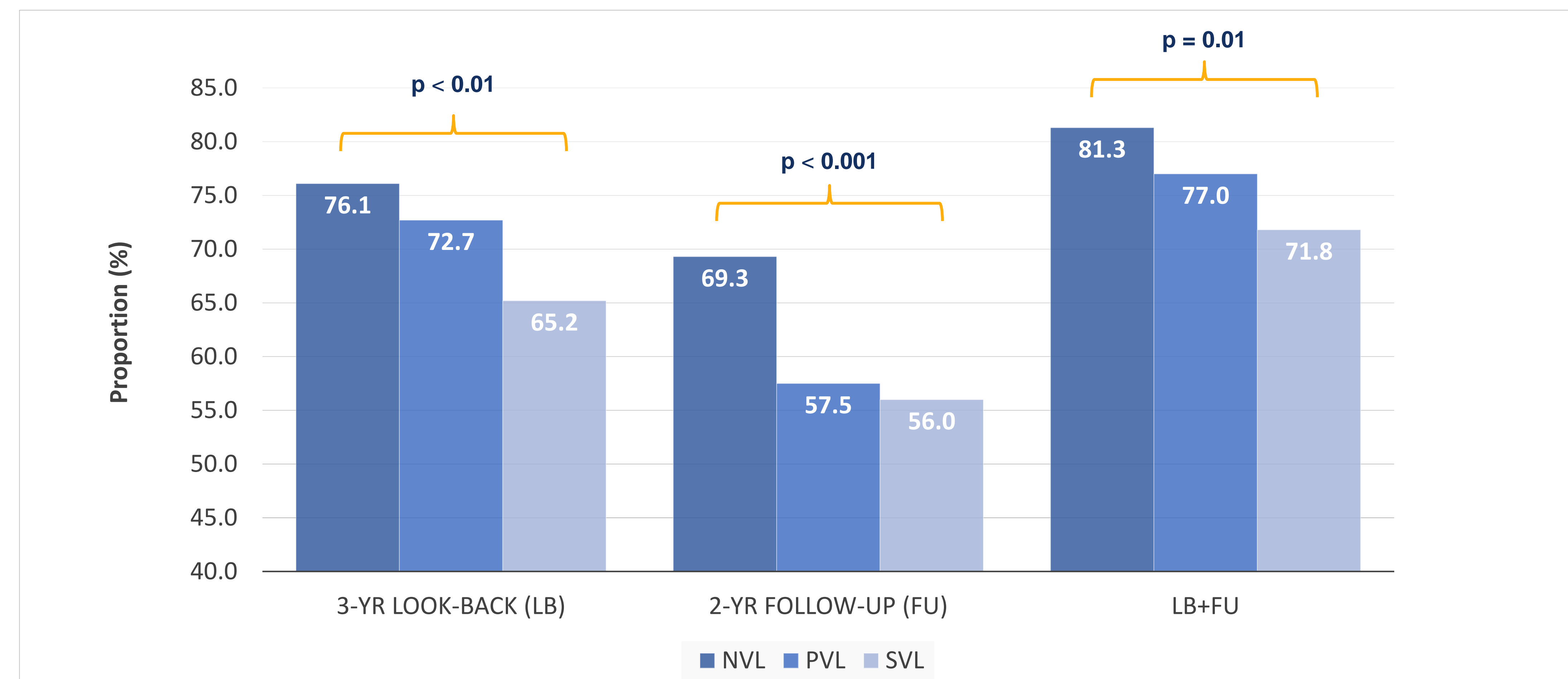

Table 2. Mean number of mammograms received during the 5-year study period and proportion of women receiving another preventative test (colonoscopy) during enrollment in fee-for-service Medicare

	Women with NVL	Women with PVL	Women with SVL	p-value
Mean ± SD number of mammograms received	3.1 ± 2.0	2.5 ± 2.0	2.3 ± 2.1	<0.001
Proportion receiving another preventative test (colonoscopy), n (%)	246 (70.7)	229 (65.8)	225 (64.7)	0.20

Table 3. Adjusted[a] odds ratios of receiving screening mammography in the 2-year follow-up period among women in Medicare with NVL, PVL, and SVL

	OR (95% CI)	p-value
Women with PVL vs. NVL	0.56 (0.36-0.87)	0.009
Women with SVL vs. NVL	0.58 (0.37-0.90)	0.01
Women with SVL vs. PVL	1.03 (0.67-1.57)	0.90
Receipt of mammogram during look-back period	20.6 (10.4-40.9)	<0.001
Receipt of colonoscopy during Medicare enrollment	3.2 (1.8-5.4)	<0.001

[a]Odds adjusted for prior mammograms during the 3-year look-back period and receipt of colonoscopy (another preventative test) during enrollment in fee-for-service Medicare

KEY FINDINGS

- A substantially greater proportion of women received ≥1 mammogram to screen for breast cancer within the 3-year look-back, 2-year follow-up, and 5-year period in the NVL group compared with the PVL and SVL groups.

- The mean number of mammograms received per patient during the 5-year period was significantly higher for women with NVL compared with women with PVL or SVL.

- Patients with SVL had 42% decreased odds, and patients with PVL had 44% decreased odds of receiving mammography during the follow-up period compared with patients with NVL.

- Receipt of mammograms during the look-back period was associated with increased odds of receiving mammograms in the follow-up period among all 3 groups.

CONCLUSIONS

- Within this Medicare cohort, women with visual impairment were significantly less likely to receive mammography to screen for breast cancer than their non-visually-impaired counterparts.

- Health care professionals should look for ways to help ensure that patients with visual impairment or other disabilities receive mammograms and other preventative screenings as recommended by the USPSTF.

- Future studies are needed to assess whether a team-based approach involving coordination between primary care providers and eye care professionals may facilitate timely and appropriate receipt of preventative services for patients with visual impairment.

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