Incidence of herpes zoster in the pre and post vaccine era: do trends differ between blacks and whites?

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Background
• Herpes zoster (HZ) is common: 1.3 people in the U.S. will get it.
• The incidence of HZ increases with age.
• HZ incidence among blacks is 25%–65% lower than among whites in the U.S. (Kawai et al. 2017).
• By 2015, self-reported Zoster Vaccine Live (ZVL, Zostavax™) coverage among adults ≥65 years old was 38.3% among whites compared with 14.1% among blacks (National Health Interview Survey).
• A previous estimate of HZ incidence among Medicare beneficiaries showed an increase from 1992 to 2007. From 2008-2010, trends were unclear (Hays et al. 2011).

Objective

Methods
• Study Design: This was a retrospective observational cohort study. We used administrative health claims from a 5% random sample of Medicare beneficiaries (ResDAC, 2015).
• Study participants and attributes: Medicare beneficiaries ≥65 years old with ≥1 year of continuous enrollment in Medicare Parts A and B from 1991 through 2015. Self-reported race was categorized into white, black, and other.
• Vaccination: ZVL was identified by Current Procedural Terminology (CPT) code 90736 or specific National Drug Codes (NDC: ‘00006496300’, ‘00006496341’ or ‘5486570300’).

Methods, cont.
• Outcome: We defined an incident case of HZ as the earliest first HZ episode (ICD-9 code 632 or ICD-10 code B02), in the first diagnostic position among beneficiaries with no HZ code in the previous year. A case was a censoring event. Persons with a code for postherpetic neuralgia (ICD-9 codes 313.12 or 313.1 or ICD-10 codes B02.22 or B02.23) were excluded.
• Analysis: We calculated incidence of first HZ episode by dividing the number of cases by the total number of person-years, and during the periods before and after 2007. Incidence was stratified by age, sex, and race. We used Poisson regression to generate incidence rate ratios to examine HZ incidence trends in the pre and post vaccine era.

Results
• Among 5,357,350 beneficiaries, there were 277,311 first HZ episodes captured (10.2 cases/1,000 person-years (py)) (Table 1).
• During the pre vaccine era (1992–2006), HZ incidence increased by 2% per year. During the post vaccine period (2007–2015), HZ incidence decreased by 1% per year.
• Pre and post vaccine era trends were similar among younger and older Medicare beneficiaries (Figure 1).
• Prior to 2007, HZ incidence increased among both blacks and whites. Although incidence is double in whites (10.3 cases/1,000 py) compared to blacks (5.0 cases/1,000 py), the rate of increase was similar (p=0.73) in the pre vaccine era.
• During the post vaccine era, HZ incidence decreased 1.8% per year in whites and did not change significantly in blacks (p=0.001) (Figure 2).
• By 2015, 19.9% of white Medicare beneficiaries had a claim for a ZVL, whereas 7.3% of black beneficiaries had a claim for the vaccine.

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