**ABSTRACT**

**Background:** The incidence of Herpes Zoster (HZ) in the U.S. has been estimated to be 1 million cases or more annually with a higher rate in adults over 60 years of age. Previously, we reported that the incidence of HZ had increased from 3.10 episodes per 1,000 veterans in 2000 to 5.22 in 2007. This is a follow-up study to evaluate the incidence of HZ in veterans after the introduction of the zoster vaccine in 2007.

**Methods:** We derived incidence rates using the VA Managed Cost Accounting System (formerly Veterans Health Decision Support System or DSS) reports of HZ by ICD-9 code and corresponding denominator data for all veterans in care. This is a national automated management information system that includes both medical and financial data for veterans at all VA medical centers. For the purpose of this study, we included all unique visits; if a veteran had multiple visits for the same episode of HZ, we chose to count only unique patients with HZ code seen each year. The annual rates of HZ were calculated by dividing the number of unique patients with HZ by the total number of veterans seen that year. The same method was used to calculate the rate by age groups. The Chi square for trend was calculated for the total and age-specific rates over the entire period. We used data from 2007 to present of the use of zoster vaccine nationally.

**Results:** The total number of veterans seen increased from 5,292,175 in 2007 to 6,262,620 in 2015. The number of zoster episodes increased from 28,529 in 2007 to 36,868 in 2015 (Figure 1). Since 2007, the annual incidence of HZ increased slightly from 5.38 per 1,000 veterans to 5.89 in 2015 (p=0.0173; p=0.1075) (Figure 2). Age-specific rates revealed a drop in the annual incidence of HZ for the age group 40-49 and older after 2013. This drop was only statistically significant for the age group 60-69 (p=0.0153) (Figure 3). There were 239,202 doses of the zoster vaccine administered at the VA during the study period.

**Conclusions:** The incidence of HZ is stable after years of increase at the VA except for the age group 60-69 where the incidence has been decreasing over the past 2 years. There has been limited use of the zoster vaccine at the VA. Further studies are needed to elucidate the reason behind this trend in the HZ incidence and increased efforts are needed to use the vaccine more widely.

**Aims:**

1. Evaluate the trend of HZ incidence since 2007 at the VA.
2. Estimate the zoster vaccine coverage for veterans age 60 and older after the introduction of the vaccine.

**INTRODUCTION**

The incidence of HZ is estimated to be 2 million cases annually, with a lifetime risk of ~10%–20% [1]. The rate has been noted to be 1.2-4.8 cases per 1,000 persons in immunocompetent adults of all ages but increases to 7.2-11.8 cases per 1,000 persons for adults older than 60 years [2,3]. We have previously reported that the incidence of HZ had increased from 3.10 episodes per 1,000 veterans in 2000 to 5.22 in 2007. This increasing rate was seen in both men and women and in all groups older than 40 years [4]. A recent population-based study has found a similar increase in HZ incidence from 0.76 per 1,000 person-years in 1945-1949 to 3.15 per 1,000 person-years in 2000-2007 [5]. The morbidity and mortality of HZ, including postherpetic neuralgia, imposes significant impacts on quality of life [6]. The zoster vaccine was FDA approved for the prevention of HZ in adults over 60 years of age in May 2007 (and over 50 years in March 2011). The vaccine was placed on VA national formulary in November 2007.

**METHODS**

To evaluate the continuing trend in the annual incidence of HZ since 2007, we derived incidence rates using the VA Medical Cost Accounting System reports of HZ by ICD-9 code and corresponding denominator data for all veterans in care (inpatient & outpatient). Data from the Managerial Cost Accounting System was also used to present the use of the HZ vaccine nationally.

**RESULTS**

**Figure 1. Unique Zoster Cases, 2000-2015 National Data, by Year**

**Figure 2. Annual Zoster Rates, 2000-2015 National Data, by Year**

**Figure 3. Age Specific Rate of Unique Zoster Cases, 2000-2015* National Data, by Year**

Since 2007, the annual incidence of HZ decreased slightly from 5.39 per 1,000 veterans to 5.89 in 2015 (p=0.0173; p=0.1075) (Figure 2).

**Table 1. Total Number of Veterans Seen for Herpes Zoster, National Data by Year and Age Group, 2007-2015**

**CONCLUSIONS**

- **Our data in a large veteran population shows that the incidence of HZ is stable after years of increase at the VA except for the age group 60-69 where the incidence has decreased over the past 2 years.**
- **There has been limited use of the zoster vaccine at the VA.**
- **Further studies are needed to elucidate the reason behind this trend and increased efforts are needed to use the vaccine more widely.**
- **Strengths of the study include the large number of patients included, availability of electronic medical records, large administrative databases, and validation study in Atlanta veterans.**
- **Limitations include missed cases of veterans who diagnosed or treated elsewhere.**

**BIBLIOGRAPHY**