Hepatitis B Virus (HBV) leads to significant morbidity and mortality in the U.S. with twice the risk of HBV infection and complications in adults with diabetes mellitus (DM) as compared to those without.

In 2011, the Centers for Disease Control and Prevention (CDC) and the Advisory Committee on Immunization Practices (ACIP) recommended Hepatitis B vaccination in unvaccinated adults with DM aged 19 through 59 years. Yet, hepatitis B vaccination rates in adult DM patients remain low at <10%. At least part of this failure to vaccinate is due to provider lack of awareness of the CDC/ACIP recommendation.

A 2017 study from the Journal of American Pharmacists Association, 77% of physician residents surveyed at an academic primary care clinic did not recommend Hepatitis B vaccination to their adult DM patients; of these, 78% reported their lack of awareness about the CDC/ACIP recommendation as the primary reason.

As such, little is known about best practices to provide awareness of the CDC/ACIP recommendation which, in turn, could lead to higher Hepatitis B vaccinations in adult DM patients.

In a convenience sample patient population (N=206) of our interdisciplinary (MD/NP) primary care clinic at the Louis Stokes Cleveland Veterans Affairs (VA) Medical Center, only 15% of DM patients aged 15-59 years were vaccinated against Hepatitis B. Moreover, only 50% of primary care residents were aware of the CDC/ACIP recommendation.

To increase provider awareness of CDC and ACIP recommendations about Hepatitis B vaccinations in adult DM patients in a resident VA primary care clinic by 50% from March to June 2017.

An interdisciplinary team of medical, social work and psychology trainees formed to look into improving provider knowledge regarding HBV vaccination. Initial analysis showed many contributing factors to low rates of vaccinations:

- Providers
- Protocol
- Materials
- Patients

Following initial analysis and review of data, we attempted the following interventions from March of 2017 through June of 2017 to improve provider knowledge with the hope that increased vaccination rates would ultimately result:

- Review baseline showing low vaccination rates and low PCP knowledge
- Literature review shows local data similar to national
- Formal didactic session to medical residents, NP residents and students regarding importance of Hepatitis B vaccination, handout provided to participants
- Microburst teaching at smaller team huddles
- Continued microburst teaching at huddles
- Visual reminders placed in medical offices as well as trainee workspaces
- Repeat surveys of providers to assess updated level of knowledge
- Analysis of results demonstrate improvement in knowledge

Pre Intervention N=11 (8 MD 3 NP)

- Do you routinely ask your diabetic patients about Hepatitis B vaccination?  
  - Yes: 50%  
  - No: 50%

Is HBV vaccine recommended by the CDC for adults with diabetes?  
- Yes: 50%  
- No: 50%

Post Intervention N=11 (8 MD 3 NP)

- Do you routinely test for HBV serologies in your diabetic patients with unknown HBV status?  
  - Yes: 50%  
  - No: 50%

- Did the education we provided this year change the way you practice?  
  - Yes: 50%  
  - No: 50%

Provider knowledge of the CDC/ACIP recommendation to vaccinate against Hepatitis B in adult DM patients was increased by nearly two-fold after a peer-led educational intervention in an interdisciplinary primary care clinic.

Provider educational interventions can be incorporated into the workflow of an interdisciplinary resident primary care clinic, but will need to be individually tailored to community-based outpatient practices.

How significantly provider awareness changes behavior is unclear and needs to be further explored.

Attending physicians who supervised residents in clinic were not surveyed about their baseline awareness of the CDC/ACIP recommendation and could have had contributed to assessed outcomes.

Work with nursing/diabetic educator teams to educate DM patients about Hepatitis B vaccination.

Assess impact of enhanced provider awareness on Hepatitis B vaccination rates in DM patients.

Provider knowledge of the CDC/ACIP recommendation to vaccinate against Hepatitis B in adult DM patients was increased by nearly two-fold after a peer-led educational intervention in an interdisciplinary primary care clinic.

Lessons Learned

- Provider educational interventions can be incorporated into the workflow of an interdisciplinary resident primary care clinic, but will need to be individually tailored to community-based outpatient practices.
- How significantly provider awareness changes behavior is unclear and needs to be further explored.
- Attending physicians who supervised residents in clinic were not surveyed about their baseline awareness of the CDC/ACIP recommendation and could have had contributed to assessed outcomes.

Next Steps

- Work with nursing/diabetic educator teams to educate DM patients about Hepatitis B vaccination.
- Add Hepatitis B vaccination to DM patient workflow algorithm.
- Assess impact of enhanced provider awareness on Hepatitis B vaccination rates in DM patients.

References

Azarova Cannavos DO, Shmuel Pokryfky MD, Victoria O’Keefe-PyD, Eun Pokryfky LSW, Sandy Chang MD MHS
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