Viral Hepatitis and Human Papillomavirus Vaccination during Pre-exposure Prophylaxis: Factors Associated with Missed Vaccination

Angelo Roberto Raccagni, Daniele Ceccarelli, Benedetta Trentacapilli, Laura Galli, Riccardo Lolatto, Diana Canetti, Elena Bruzzesi, Caterina Candela, Antonella Castagna, Silvia Nozza

1 Infectious Diseases Unit, Vita-Salute San Raffaele University, Milan, Italy
2 Infectious Diseases Unit, IRCCS San Raffaele, Milan, Italy

Background

-HIV pre-exposure prophylaxis (PrEP) visits are an opportunity for HAV, HBV and HPV vaccination.
-Aim of this study was to evaluate the factors associated with missing least one of these vaccinations among men who have sex with men (MSM) receiving PrEP.

Materials and methods

-Individuals receiving PrEP at the Infectious Diseases Unit of San Raffaele Scientific Institute, Milan, Italy, were considered.
-Only individuals who received at least one follow-up visit between May 2017 and May 2022 were included.
-Dropout was defined as no PrEP-related visits for at least 12 months.
-Participants were considered protected if at least on the following:
  i) Prior to PrEP access: a positive serology (IgG-HAV+, HbsAb>10 mU/l/ml) or vaccination history were recorded;
  ii) After starting PrEP: at least one dose of each vaccination was administered.
-Participants were considered fully protected if they received before or during PrEP access all of the following:
  i) HAV vaccination or infection;
  ii) HBV vaccination or infection;
  iii) HPV vaccination, if <46 years old.
-Chi square test or Kruskal-Wallis test were used to compare the characteristics of those fully, partially and not protected.
-Factors associated with the probability of missing at least one vaccination were assessed by multivariable logistic regression and a classification tree analysis.

Results

-Overall, 473 MSM were considered:
  i) 146 (31%) were fully vaccinated/protected
  ii) 231 (48%) were partially vaccinated/protected
  iii) 96 (20%) were not vaccinated/protected
-**Hepatitis A:** 131 were previously protected for HAV, 151 had negative IgG-HAV and 103 were vaccinated during PrEP visits
-**Hepatitis B:** 200 were previously protected for HBV, 88 had an HbsAb<10 and 44 were vaccinated during PrEP visits
-**Human papilloma virus:** 12 were previously vaccinated for HPV, 209 were vaccinated during PrEP visits.
-Individuals’ characteristics are presented in Table 1.
-Daily-based PrEP users (fully 93, 63.7%, partially 107, 46.3%, not protected 40, 41.7%, p=0.001) and those with a baseline STI diagnosis (43, 29.5%, 55, 23.8%, 15, 5.6%, p=0.048) were more frequently fully vaccinated.

Discussion and conclusions

-Daily-based PrEP was associated with full protection for HAV, HBV and HPV.
-Strategies targeting individuals at risk of missing vaccinations need to be implemented, with a main focus on event-based PrEP users.