



VISP, PrEP, and nPEP: a tangled web!

Rabeeya Sabzwari, MD | Joelle Farano, PharmD, MBA, BCPS
Ursula Patel, PharmD, BCPS, BCIDP, AAHIVP | Jonessa Farano, MSN, ANP-BC
Edward Hines, Jr. Veterans Affairs Hospital



Background/Definitions¹⁻⁴

- Vaccine Induced Seropositivity (VISP):** defined as ≥1 EIA reactive tests and either a negative, indeterminate, or atypical positive Western blot [profile consistent with vaccine product] and HIV-1–negative by nucleic acid testing
- Pre-Exposure Prophylaxis (PrEP):** a prescription therapy for an HIV-negative person, who is at risk for acquisition of HIV, in order to prevent infection
- Non-occupational Post-Exposure Prophylaxis (nPEP):** a prescription therapy for persons who are HIV-negative, who present after an exposure to HIV and carry a substantial risk for HIV transmission due to sexual contact, injection drug-use, and other nonoccupational exposures to HIV

Patient Case

A 44-year-old Caucasian bisexual male with known VISP was initiated on PrEP while enrolled in an HIV vaccine trial. The need for nPEP arose after a high-risk encounter and non-adherence to PrEP. This was further complicated by the known VISP status and difficulty in excluding active infection with the use of routine HIV antigen/antibody tests. After completion of an nPEP course, the patient was restarted on PrEP. A one-time HIV-1 DNA qualitative PCR test after completion of nPEP was obtained, as an HIV-1 RNA quantitative PCR test obtained in this setting would have unreliably excluded acquisition of HIV. The patient maintained a negative HIV status throughout the completion of nPEP and the follow-up HIV-1 RNA quantitative PCR tests completed at 30 and 90-day interval remained negative.

Table Timeline

Monitoring Test or Activity	Frequency	Results	Notes
Clinic visits	- Baseline 48 hours - Week 2 - Week 4 - Week 12		Follow-up at 48 hours and 2-week interval conducted by a telephone call
HIV-1 RNA Quant PCR Test	Baseline	Not detected	Every 90 days while on PrEP for this patient with VISP
HIV-1 DNA Qual PCR Test	Week 4	Not detected	One time only after completion of nPEP
Serum liver enzymes, blood urea nitrogen, creatinine, complete blood count (CBC)	Baseline	Within normal limits	Baseline testing was normal Patient reported no symptoms of drug-induced kidney or liver injury while taking nPEP therapy
Hepatitis B serology panel (surface antigen, surface antibody)	Baseline	Anti-HBs: Positive anti-HBc: Negative HBsAg: Negative	Diagnostic testing demonstrates immunity from previous Hepatitis B vaccination
Rapid Plasma Reagin (RPR)	Baseline	Non-Reactive	
3-site screening for gonorrhea and chlamydia	Baseline	Not detected	
Trichomonas NAAT	Baseline	Not detected	
Hepatitis C Antibody	- Baseline - Week 12	Negative Negative	
Medication Adherence Questionnaire	- Baseline - Follow-up visits		Patient reported 3 consecutive days of missed PrEP Every 90 days while on PrEP
Risk Reduction Counseling	- Baseline - Follow-up visits		Every 90 days while on PrEP or more frequently as deemed appropriate

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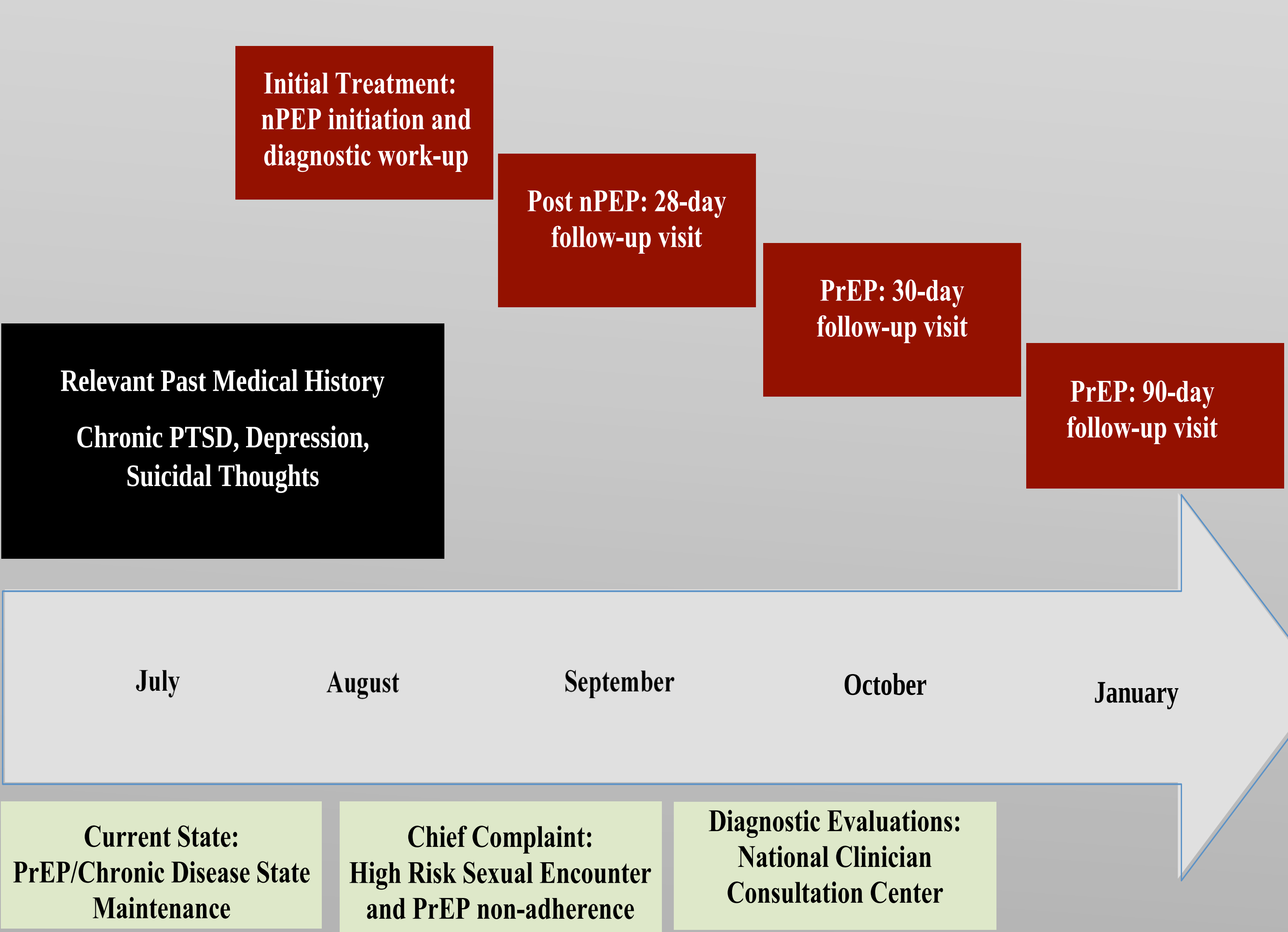
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Timeline



Significance

This case report highlights the importance of the following:

- Understanding the complex pre and postexposure prophylaxis for patients known to have VISP
- Routine HIV diagnostic testing will not reliably exclude HIV infection in patients with VISP
- During active replication of HIV, the genetic material of the virus is integrated into the DNA of the affected cell. Since antiretroviral therapy does not eliminate this HIV DNA, this highly sensitive HIV-1 DNA Qual PCR test was helpful in excluding active HIV infection in this setting.