Journal of Vaccines and Immunology

Peertechz

Hitt Sharma*, Sameer Parekh and Sunil Shewale

Serum Institute of India Ltd., India

Dates: **Received:** 01 December, 2014; **Accepted:** 08 February, 2015; **Published:** 28 February, 2015

***Corresponding author:** Hitt Sharma, Serum Institute of India Ltd., India, E-mail: drhjs@seruminstitute.com

www.peertechz.com

Review Article

Travel Vaccination

Introduction

With increased globalization, the international boundaries between countries are diminished. Number of worldwide activities such as tourism, expansion of industry to multinational level, migrant employment, civilized efforts, international education etc. have been greater than before. The number of international tourists has grown up by an average 5% a year since 2010 with around 517 million international tourists across globe between January and June 2014 [1]. Traveling for any reasons to certain areas may raise the risk of infection because of difference in hygienic settings, food and water sources, disease pattern, environment, and immunization exposure. In few areas across world, new diseases have emerged and older diseases have re-emerged However, very few travelers take health advice during their travel. This article discusses the perspective for use of travel vaccines and associated healthcare concern which will help minimize travel-related illnesses while maximizing safe and successful journey.

Role of Travel Vaccine and Protection

You don't always need vaccinations to travel abroad. If you do, the type of travel jabs you need depends on which country you're visiting and what you're doing. Reviewing current recommendations for the region of travel is recommended prior to the scheduled medical appointment [2]. Development of immunity against vaccine generally requires days or weeks and hence, the vaccination should be planed accordingly. In addition, if uncertain regarding previous immunizations, variable tests are available to identify appropriate titer levels and whether updated boosters are indicated [3].

Routine vaccination helps to protect against number of diseases which are common across the world. Moreover, it also gives protection against those infections which have vanished but may re-appear. Being up-to-date on your routine vaccines will give you the best protection against these illnesses. For example, in 2011, there was a large outbreak of measles across Europe, and epidemiological investigations and genotyping have confirmed transmission of measles virus among several countries in the region and to the Americas. Travel had increased the risk for exposure to measles virus and its further spread into susceptible population, if not vaccinated. In these circumstances, those travelers who were previously vaccinated with two doses of measles vaccine were less likely to get infected [4]. Similarly, routine vaccination against flu, Td/Tdap, Pneumonia would be an added advantage during travel.

Recommendations for travel vaccines will depend on itinerary, duration of travel, and host factors. While advocating vaccines for travelers special considerations should be given for age of individual, overall health, pregnancy, immigrant, chronically ill, students, and disabled travelers. Vaccines not only protect individual from possible infections which are present in other countries but also prevent its spread. The risk of diseases transmitted through unhygienic food and water is more in individuals traveling to developing countries. Therefore, anyone traveling in southern Asia is recommended to get vaccinate against Typhoid fever, hepatitis A and B.

In case of known and existing illness in particular part of the world, vaccination becomes must. International Health Regulations currently require two vaccines for travel to specific parts of the world. The yellow fever immunization is requisite for travel to parts in sub-Saharan Africa and tropical South America, where it is endemic and intermittently epidemic [5]. Similarly, Meningococcal vaccination is required by the Saudi Arabian government but only for travel during the hajj, or annual pilgrimage to Mecca [6].

Considerations for Travel Vaccination

Disease transfer

Even when any particular destination is considered safe for traveling, the risk of disease transfer from other places remains. With an increase in human movement, the opportunities for disease spread have increased. For example, first patient of H1N1 influenza virus was found in Mexico in 2009, but it rapidly spread to other countries creating pandemic situation. Similarly, the current Ebola virus reached Liberia, Sierra Leone, Spain and US, with first identification in Guinea, a western African nation [7]. Careful consideration of overall environment, history of regional diseases before actual travel, seeking medical advice and vaccination if available is the best possible method of prevention.

Need for harmonized guidelines

Various regulatory authorities, international organizations, professional organizations have prepared guidelines for traveler. For example, CDC has made recommendations for travelers in Yellow book of Travelers' health, WHO in International Travel and Health while The Infectious Disease Society of America has published travel medicine practice guidelines. However, these guidelines lack harmonization when it comes to different countries e.g. availability of products in different countries, different culture and perception about risk, lack of evidence, difference in public opinion, collection and evaluation of data, rumors, role of media and difference in expert opinion. Collaboration of different national, international organizations and regulatory industry will help to minimize the conflict and strengthen harmonization.

Unavoidable incidences

Risk encounter during the travel may cause harm to traveler. Fever while return, traveler's diarrhea; skin and soft tissue infection are common infections which require immediate attention. Also regulatory recommendations of different countries may cause unavoidable risk. For example, the UK does not recommend BCG immunization for infants. However, in India it is in routine vaccination programmed mainly because India has the world's largest tuberculosis epidemic. It resides to be the biggest health problem in India. UK based children of non residential Indians who travel to India during holiday or festive session may get exposed to tuberculosis infection. To avoid such risk, the children must be vaccinated in UK before travel or soon after their arrival to India.

Travel consultation before and after

All travelers are not medical expert and thus require consultation before traveling to a particular place and sometimes even after return from travel. Pre-travel consultation includes the health hazards associated with area, immunization requirement, necessary steps in case of emergency situation. Very little number of travelers seek advice from private consultants. Similarly, very few traveling agencies or regulatory authorities provide consultation facility for travels. Also, a number of doctors and health care providers have unsubstantiated personal concerns about the safety and efficacy of the vaccines. Many doctors are not vaccine-savvy and therefore do not encourage their patients to take vaccine during their travel. Proactive health measures are necessary not only from regulatory or travel agency but also by the traveler himself.

Cost of immunization

At times, travel vaccination is not affordable to everyone, or even if price is reasonable, few travelers still have financial constrains [8]. Travelers who have monetary constrains and remain unvaccinated are prone to infection because they may use unhygienic housing, food etc. Also, many insurance policies do not cover cost of travel immunization and travelers need to pay out of their pocket which becomes a hindrance for uptake of travel vaccines. National administration should subsidize the travel vaccination depending upon the reason for travel and affordability of the traveler.

Other Challenges

Risk of infection may vary with mode of traveling. For example, travelers by cruise ship are known to get exposed to acute infection of rubella or varicella [9]. Those who travel by air are more likely to get infected with communicable diseases such as influenza, malaria [10].

Development of immunity after administration of travel vaccine is questionable, mainly in people who travel on short notice or with pre existing medical conditions or with immune deficiencies. Similarly, there may be an increased risk of infection, if travelers (e.g. students or researcher) extend their stay and the protection provided through vaccination decreases over time. A person will be more at risk of disease in rural areas than in urban areas, if he is backpacking and staying in hostels, camping or if in contact with animals. There is also a strong possibility of more diseases if someone is working in a refugee camp or helping after a natural disaster.

Conclusion

With increasing globalization, people have started traveling across the globe. They should recognize potential hazards in their chosen destinations and protect their health during travel. Regulatory authorities should harmonize guiding principles and country-wise appropriate immunization schedule. Collaboration and cooperation of regulatory and travel industry with international organizations can provide extensive help, sound advice and create awareness. Forward planning, appropriate preventive measures, careful precautions can protect the traveler's health.

References

1. (Accessed on 9th Nov 2014) http://media.unwto.org/press-release/2014-09-15/international-tourism-5-first-half-year
2. Keystone JS (2008) Travel Medicine: Expert Consult. Mosby
3. Paulke-Korinek M, Rendi-Wagner P, Kundi M, Tomann B, Wiedermann U, et al. (2008) Pre travel consultation: rapid dipstick test as a decision guidance for the application of tetanus booster vaccinations. J Travel Med 15:437-441.
4. (Accessed on 9th Nov 2014) http://www.who.int/csr/don/2011_04_21/en/
5. Center for Disease Control and Prevention: http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-3-infectious-diseases-related-to-travel/yellow-fever (Accessed on 12th Nov 2014)
6. Center for Disease Control and Prevention: http://wwwnc.cdc.gov/travel/destinations/clinician/none/ saudi-arabia (Accessed on 12th Nov 2014).
7. (Accessed on 19th Nov 2014)http://en.wikipedia.org/wiki/Ebola_virus_disease
8. Beutels P, Van Damme P, Piper Jenks N (2001) Economic evaluation in travel medicine. In: DuPont HL, Steffen R, editors. Textbook of Travel Medicine and Health. 2nd ed. Hamilton, Ontario: Brian C Decker. p. 21–27.
9. Centers for Disease Control and Prevention (1998) Rubella among crew members of commercial cruise ships: Florida, 1997. MMWR Morb Mortal Wkly Rep 46: 1247-1250.
10. Pavia A T (2007) Germs on a Plane: Aircraft, International Travel, and the Global Spread of Disease. J Infect Dis 195: 621-622.