THE UNIJECT DEVICE – A PROPHYLACTIC PICK FOR A BETTER REMEDY

Navya Devireddy*, Divya Jonnala, Fareeda Rafath, Sushmitha Gutti, D.Eswar Tony, Rama Rao Nadendla
Department of Pharmacy Practice
Chalapathi Institute of Pharmaceutical Sciences, Lam, Guntur 522 034, A.P

Abstract:
The Uniject injection system is an auto disable injection device that was designed to meet persistent logistics, safety and cost effectiveness. Several studies indicate that Uniject device is safer, poses less risk of needle stick, and is more efficient because it is already prefilled with the right amount of medicine or vaccine. Uniject injection delivery system was successfully used and administered to 75 million doses of vaccines and other medicines worldwide. The present review highlights the structure, functions, applications and also advantages of the uniject device.

Key words: Uniject, tetanus toxoid, Hepatitis B vaccine.

Corresponding author:
Navya Devireddy
Chalapathi Institute of Pharmaceutical Sciences,
Chalapathi Nagar, Lam,
Guntur 522 034
Email id – tinklestar19@gmail.com
INTRODUCTION:
The Uniject is a single-use needle, designed with a pre-filled drug delivery container that cannot be refilled. This type of needle is effective in preventing “needle sharing” because it can only be used once and provides a sterile injection each time. It is also user-friendly in that medical personnel can be trained to use the Uniject in under two hours (PATH, n.d.). It is compact, convenient, easy to store and increases dosage precision [1]. Uniject is a plastic disposable injection device, pre-filled with a single dose of vaccine or medication, which is enclosed in a sealed blister and a permanent needle, is attached. The cap was then removed the needle inserted into the subject, and the dose was delivered by squeezing the blister until it collapsed. The device is designed such that it cannot be reused but collected and incinerated [2].

Advantages:
The following are the findings of UNIJECT device [3]
- Easier than a standard syringe
- Less painful and intimidating than a standard syringe
- Training time is short
- Safe for self injection
- Generates less waste
- Saves time

Easier than a standard syringe:
Health providers find Uniject easier to use than a standard syringe, reporting that it is safer, poses less risk of needle stick, and contains the correct dose.

Less painful and intimidating than a standard syringe:
Health providers and clients prefer Uniject to a standard syringe as it caused less discomfort.

Training time is short:
Health workers can learn to use Uniject in a short time through peer-led or self-guided trainings and materials.

Safe for self-injection:
Health providers say women can safely and correctly give themselves injections with the device.

Generates less waste:
Uniject generates less waste than a traditional needle and syringe.

Saves time:
Use of Uniject requires less time and fewer physical motions by health providers.

Applications:
- Many surveys in developing countries have revealed that upto 30% of injections used for immunization are not sterile. Disposable syringes are reused and reusable syringes are often improperly sterilized, resulting in a significant risk of transmission of blood borne pathogens [4].
- Mainly applied to avoid wastage associate with multi dose vials.
- Mainly for the injections to Hepatitis B, Hepatitis C and HIV. Cyclofem®, hepatitis B and tetanus toxoid vaccines, as well as the drug oxytocin, which is used to prevent postpartum hemorrhage.
- For women in case of injectable contraceptives.

![Fig 1: Uniject Delivery System Features](image-url)
DISCUSSION:
Among the mothers who had received injections with the device, 94 percent said they had experienced no anxiety, and 97 percent said they would agree to receive future injections with the device. More than half of the women (56 percent) said they felt less pain when injected with Uniject compared to an injection with a standard syringe. Among 30 pregnant women in Bolivia who received injections of tetanus toxoid with Uniject, 50 percent said it was less painful than previous injections received via a conventional syringe, 10 percent reported the pain was comparable to a conventional syringe, and 7 percent said it was more painful. The remaining 33 percent were unable to compare. Eighty percent of the women said the appearance of Uniject did not cause them any anxiety, in part because of its small size [5].

Table 1: Summary of Uniject Device Studies and Introduction Activities [6]

<table>
<thead>
<tr>
<th>Date</th>
<th>Drug or Biological</th>
<th>Country</th>
<th>Focus (Setting)</th>
<th>Lead Coordinator</th>
<th>PATH Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991-1992</td>
<td>Prostaglandin</td>
<td>Egypt</td>
<td>Acceptability (Hospital)</td>
<td>Karolinska Institute and Assiut University</td>
<td>None</td>
</tr>
<tr>
<td>1991</td>
<td>Prostaglandin</td>
<td>India</td>
<td>Acceptability (Hospital)</td>
<td>Unknown</td>
<td>None</td>
</tr>
<tr>
<td>1995</td>
<td>Tetanus toxoid</td>
<td>Bolivia</td>
<td>Acceptability, use by traditional birth attendants (Home); study funded by HT</td>
<td>PATH</td>
<td>Lead*; facilitated supply*</td>
</tr>
<tr>
<td>1995-1996</td>
<td>Tetanus toxoid and hepatitis B vaccine</td>
<td>Indonesia</td>
<td>Acceptability, immunogenicity of hepatitis B vaccine (Home); study funded by HT</td>
<td>PATH</td>
<td>Lead*; facilitated supply*</td>
</tr>
<tr>
<td>1995-1996</td>
<td>Cyclofem</td>
<td>Brazil</td>
<td>Acceptability (Clinic)</td>
<td>SEMICAMP</td>
<td>Advised; facilitated supply</td>
</tr>
<tr>
<td>1997</td>
<td>Cyclofem</td>
<td>Brazil</td>
<td>Self-administration (Clinic)</td>
<td>SEMICAMP</td>
<td>Advised; facilitated supply</td>
</tr>
<tr>
<td>1998-2000</td>
<td>Oxytocin</td>
<td>Angola</td>
<td>Acceptability, clinical effectiveness (Hospital)</td>
<td>WHO</td>
<td>Advised; facilitated supply*</td>
</tr>
<tr>
<td>1999-2000</td>
<td>Oxytocin</td>
<td>Indonesia</td>
<td>Acceptability, use by village midwives (Home)</td>
<td>PATH</td>
<td>Lead; facilitated supply*</td>
</tr>
<tr>
<td>1999-2000</td>
<td>Cyclofem</td>
<td>Mexico</td>
<td>Introduction, self-administration (Clinic/Home)</td>
<td>IMSS</td>
<td>Advised*</td>
</tr>
<tr>
<td>1999-2000</td>
<td>Hepatitis A vaccine</td>
<td>United States</td>
<td>Provider acceptability, clinical equivalence with syringe (Outpatient clinic)</td>
<td>Johns Hopkins University</td>
<td>None</td>
</tr>
<tr>
<td>2000-2003</td>
<td>Hepatitis B vaccine</td>
<td>Indonesia</td>
<td>Nationwide introduction of home-delivery birth dose (Clinic/Home)</td>
<td>Indonesian MOH and PATH Children’s Vaccine Program (CVP)</td>
<td>Lead; facilitated supply*</td>
</tr>
</tbody>
</table>

Continue.......

w w w . i a j p s . c o m
CONCLUSION:
From different surveys and collected data, health providers and patients support unject for delivering injectable contraceptives, vaccines and other injectable medications. Unject also shows potential cost savings in training and waste management. Also women can safely and correctly give themselves injections with the device.

REFERENCES:
2. N.Joshi et al. Immunogenicity and safety of hepatitis B Vaccine (Shanvac-B) using a novel prefilled single use injection device unject in Indian subjects; Ind J Med Sci vol 58 No 11, November 2014