Update on PrePex Device Research

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Overview

• Background

• Completed Studies
  – Safety Trials
  – PrePex in the Hands of Nurses
  – PrePex in Adolescents

• Ongoing Studies
  – Risk Compensation (RC)
  – PrePex Use in HIV+ve Men
  – Message Testing
Background

• MOHCC interested in innovative models to increase scale up of VMMC
  • MC devices, such as PrePex\textsuperscript{TM}, had the potential to make the procedure simpler and usable by non-physician providers at primary health care facility level
    • making VMMC more accessible and acceptable to clients, especially in rural areas.
A Inner Ring
B Verification Thread (wrapped around Elastic Ring)
C Delivery Ring
D Elastic Ring
Trial Series

- **Phase 1** - A safety phase to determine the safety and efficacy of the PrePex™ device (/10-7/11/2011)
- **Phase 2** - A comparative phase (RCT) to assess the performance of PrePex method compared to forceps guided surgical method (21/11/2011-18/01/2012)
- **Phase 3** - A field study phase to assess safety, efficacy and the ease of use by nurses (RGNs, PCNs) (8/5-9/7/2012 and 25/4-10/9/2013)
- **Phase 4** – Study of safety and efficacy of the device when used in special populations e.g. adolescents (8/8/2013-23/1/2014), HIV+ men (June 2015-)
Methods and Procedures

• A One-arm, prospective study using PrePex™ device

• PrePex Circumcision performed by Doctors and Nurses
  – Application of Device: Day 0
  – Removal of Device: D7
  – Follow-up weekly visits up to 56 days post-placement or two consecutive visits assessed as “healed”

• Endpoints: number and grade of adverse events associated with device circumcision; pain levels and time to complete wound healing
PrePex Procedure
The procedure was performed in a clean, non-sterile environment
Phase 1 - Results

- 53 Men
- The median age: 30 years (Range 18-63)

Pain scores at device removal:
- 52 (98.1%) participants experienced pain at device removal
- 25 (48%) had pain score of four (moderate pain) at removal

Healing Period:
- Median complete healing time was 42 days post device application.
  - 68% of clients had healed by 42 days
  - 92% had healed by day 49

Adverse Events (AEs):
- Zero mod. to severe AEs (0%) but 2 mild wound infections resolved with oral antibiotics
Conclusion - Safety Study

- PrePex device is safe to use for MC delivered by physicians
- Pain related to PrePex appears to be minor
- The findings reaffirmed and validated similar clinical studies on PrePex done in Rwanda
Phase 2 - Study Results

- RCT: PrePex Device method (n=160) Vs Forceps Guided Surgery (n=80)
- The mean age was 29.1 years (SD=9.0) for the PrePex arm and 27.6 years (SD=7.6) for the surgical arm.

**Pain scores at device removal:**
- 111 (70%) participants experienced pain at device removal
- 7 (4%) had pain scores of four to six (moderate pain) on D7 (removal day) in Prepex arm compared to 16 (20%) in surgical arm

**Healing Period:**
- Median time was 35 days (post application) for participants in PrePex arm compared to 42 days in Surgical arm
- By D42, 86% had healed in PrePex arm compared to 68% in surgical arm

**Adverse Events (AEs):** No SAE – Both arms

**Cost:** $48.08 for Prepex and $57.16 for surgical MC
Phase 3a – RGNs Results

- 603 Men
- Mean age of participants was 26 years (18 - 73 years)
- Pain scores at device removal:
  - 566 (94%) participants experienced pain at device removal
  - 346 (58%) had VAS pain scores of two (mild pain) at removal
  - 220 (36%) had pain scores of four to six (moderate pain) at device removal
- Healing Period:
  - Mean complete healing time was 47 days post device application.
  - 46% of clients had healed by 42 days
  - 80% had healed by day 49
- Adverse Events
  - Four (0.7%) moderate/severe AEs occurred in four men, all of which were reversible
Phase 3b – PCNs Results

- 601 Men
- Mean age of participants was 24 years (18 - 64 years).
- **Pain at device removal on day seven:**
  - 538 (90%) participants experienced pain at device removal
  - 400 (67%) reported VAS pain scores of two (mild)
  - 102 (17%) reported VAS pain scores of four (mild)
  - 24 (4%) reported VAS pain scores of six (moderate)
  - 12 (2%) reported VAS pain score of eight (severe)
- **Healing Period:**
  - Mean complete healing time was 42 days post device application.
- **Adverse Events**
  - Two (0.3%) severe AEs were recorded. Self removal after displacement. Surgical excision of the foreskin was required in both cases. The two AEs resolved without permanent impairment.
Conclusions

• These results have revalidated the safety of PrePex device circumcision in the hands of registered general nurses and PCNs
  – The incidence rate of Adverse Events was 0.7% for RGNs and 0.3% for PCNs, which was lower than the incidence rate reported in the PrePex safety study performed by doctors (3.8%)

• PrePex™ can be used safely by Primary care nurses at all levels of health care, including in very rural settings.

• Up to 6% of candidates are not eligible for PrePex device circumcision and will need referral support
Phase 4 – Adolescents Results

- 402 Men
- Mean age was 14.6 years (SD=1.22).

**Eligibility**
- 934 – screened from 8/8/13=2/27/14
- 224 – Declined participation
- 49 – Device size not available
- 259 (39.5%) – Did not meet inclusion criteria (35% - Medical reasons)

**Pain at device removal on day seven:**
- 307 (76.4%) reported VAS pain score levels of two
- 69 (17.2%) reported pain levels of four

**Healing Period:**
- Mean healing time was 31.5 days (SD=5.42)
- Time to complete wound healing increased with age
- All participants had completely healed on day 49 post device application

**Adverse Events**
- Three (0.7%) mod. to severe AEs were recorded.
Phase 4 – Adolescents Results

• Adverse Events
  – One device self-removal on day 1, immediately after placement, circumcision not completed, foreskin intact no AE.
  – One early device removal on day 5, voiding due to narrow foreskin opening
  – One Insufficient skin removal required surgical intervention, conducted on day 90
Phase 4 – Conclusions

• PrePexTM device is safe and efficacious for scale up of VMMC with adolescents aged 13-17 years.
• Low adverse events rate, low pain scores and faster wound healing as compared to adult PrePex male circumcision.
• Only 25% of adolescents required the smaller device sizes (size 12-20) than adult sizes.
• High Percentage of exclusions due to medical contraindications (34.2%), more in younger age group
  – For this group, PrePex needs to be complemented with surgical male circumcision in the VMMC scale up.
Ongoing Studies
Risk Compensation

• Does risk compensation occur among men who choose MC
  – Document the prevalence of these behaviors, and identify behavioral determinants
RC AIMS

• Accrue cohorts of men who choose versus decline to get circumcised, and survey them to determine:
  – Effects of male circumcision on change in sexual behavior;
  – Prevalence of RC behavior over time;
  – Psychosocial predictors of RC;
    • Measure environmental (socio-cultural) and individual (attitudinal, normative, personal agency, sexual satisfaction) factors predicting RC behavior after circumcision;
• Use findings to design evidence-based communication messages to encourage and/or promote continued safe sexual behavior.
Sample Size

• Cohort accrued:
  – 1200 randomly selected men from those who made a decision to get circumcised
  – 1200 men who had decided not to get circumcised (a non-equivalent comparison group)
## Recruitment

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## Interviews

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<td>889</td>
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<td><strong>6 months</strong></td>
<td>587 (56.1%)</td>
<td>246</td>
<td>244 (65.4%)</td>
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<td><strong>12 months</strong></td>
<td>723 (81%)</td>
<td>247</td>
<td>238 (65.4%)</td>
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<td><strong>24 months</strong></td>
<td>77</td>
<td>240</td>
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<td><strong>Had 6 and 12 months follow-up</strong></td>
<td>539</td>
<td>221</td>
<td>1558 (65.4%)</td>
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<td>580</td>
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Use of PrePex™ Device for MC among HIV+ Men

• Goal
  – Assess the safety, acceptability and feasibility of the PrePex™ device when circumcision is performed by nurses and doctors on HIV-infected adult

• Objectives
  – Primary Objective
    • Assess safety of the PrePex™ device when applied to HIV-positive men by assessing the rate of the clinical adverse events
  – Secondary Objectives
    • Assess the level of care required to provide device MC to HIV positive men, when taking into account the following parameters:
      – PrePex™ procedure duration
      – Pain management at different stages of the procedure
      – Time to complete healing
Message Testing

• Using identified Key beliefs that best explain MC intention among men
Acknowledgements

• MoHCW
• ZNFPC
• UNFPA
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• PSI
• ZiCHIRe