Non-adherence and its impact on treatment efficacy

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**Disclosures for: Alfonso Iorio**

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<th>CONFLICT</th>
<th>DISCLOSURE — IF CONFLICT OF INTEREST EXISTS</th>
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<td>RESEARCH SUPPORT</td>
<td>Biogen Idec (Bayer, Baxter, NovoNordisk, Pfizer - No conflicts)</td>
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<td>CONSULTANT</td>
<td>Bayer, NovoNordisk – No conflicts</td>
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* European Accreditation Council for Continuing Medical Education
From “theory” to “practice”

- Effectiveness = Efficacy * Prescription * Adherence

- Effectiveness = 0.9 * 1 * 1 = 0.9
- Effectiveness = 0.9 * 0.5 * 0.5 = 0.225
- Effectiveness = 0.9 * 0 * any = 0

Haynes B, JAMIA 2009
Improving adherence

• It is a matter of changing people behavior

• It is not a medical intervention
  • The medical component is before (efficacy) and after (effectiveness)

• It is a behavioral intervention
  • It requires a “behavioral theory” aware approach
A cognitive theory approach…

- **Methods**
  - Social learning theory
  - Health belief model
  - Trans-theoretical model

- **Approach**
  - The effect(s) of any treatment and/or intervention(s) to improve adherence should ideally be measured on
    - process outcome
    - clinical outcomes

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Framing the problem of adherence

Normal joint

Clinical outcome

Normal life

“Life” Goal
Evaluating adherence

• Adherence is a process outcome, not necessarily a patient relevant outcome

• Canadian Hemophilia Prophylaxis Study:
  • ¼ of children has normal joints 10 years after 1 infusion/week
  • Hypothetical comparison against a classical regimen:
    Classical  “self-selected CHIPS”
    • Adherence: 100% 30%
    • Joint health: 100% 100%

## Adherence to prophylaxis in hemophilia

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Schrijvers et al. Haemophilia 2013
Determinants of adherence to prophylaxis

- **Illness perception**
  - Weak illness perceptions identity and consequences are associated with low adherence

- **Treatment perceptions**
  - Weak perception of need for treatment or stronger concerns regarding clotting factors are associated with low adherence

- **Hemophilia Center “effect”**
  - Quality of the relation with HC staff and time spent @ HTC are associated with higher adherence.

Llewelyn CD et al. Psychol Health 2003
De Moerloose P. et al Haemophilia 2008
Determinants of adherence to prophylaxis

De Moerloose P. et al Haemophilia 2008
Instruments and their validation

  Visual analog scale
  VERITAS-Pro
  VERITAS-PRN
A graphical open conclusion…

Belief in necessity of treatment*

Good relationship with the health care provider*

Experience of symptoms*

Absence of or infrequent symptoms§

Increasing age*

Schrijvers et al. Haemophilia 2013