

# Cost Utility Analysis of Biofeedback versus Traditional Therapy for Dyssynergic Defecation in Adults

SM Govani<sup>1</sup>, M Maneerattanaporn<sup>2</sup>, RJ Saad<sup>2</sup>

<sup>1</sup>Division of General Medicine; <sup>2</sup>Division of Gastroenterology, University of Michigan, Ann Arbor, MI

## Background

- Annual cost of chronic constipation (CC) exceeds 1.7 billion dollars in the US
- Dyssynergic defecation (DD) is a common cause of CC
- DD is the uncoordinated abdominal, pelvic floor, rectal and/or anal sphincter muscle function resulting in impaired evacuation of stool
- The treatment of DD is challenging resulting in patient dissatisfaction with traditional therapy (TT) including diet, laxatives, anxiolytic and muscle relaxants
- Biofeedback therapy (BF) including intrarectal manometric probe, electromyographic feedback, and intrarectal balloon training is commonly utilized in the treatment of DD

## Aim

To assess the cost effectiveness of BF versus TT in adults with DD from a third party payer perspective

## Methods

A decision tree was constructed to predict the expected third party payer costs over 1 year period for DD following BF vs. TT

### Costs

- BF costs obtained from 2010 CMS Physician Fee Schedule \$769 (initial visit + 11 follow up visits)
- Yearly cost of CC to third party payer from large HMO data \$7522 (95% CI: \$5689 - \$9146)

**Response rates at 1 year:** Response defined as:

- Adequate response in bowel symptoms
- Or significant improvement in bowel satisfaction

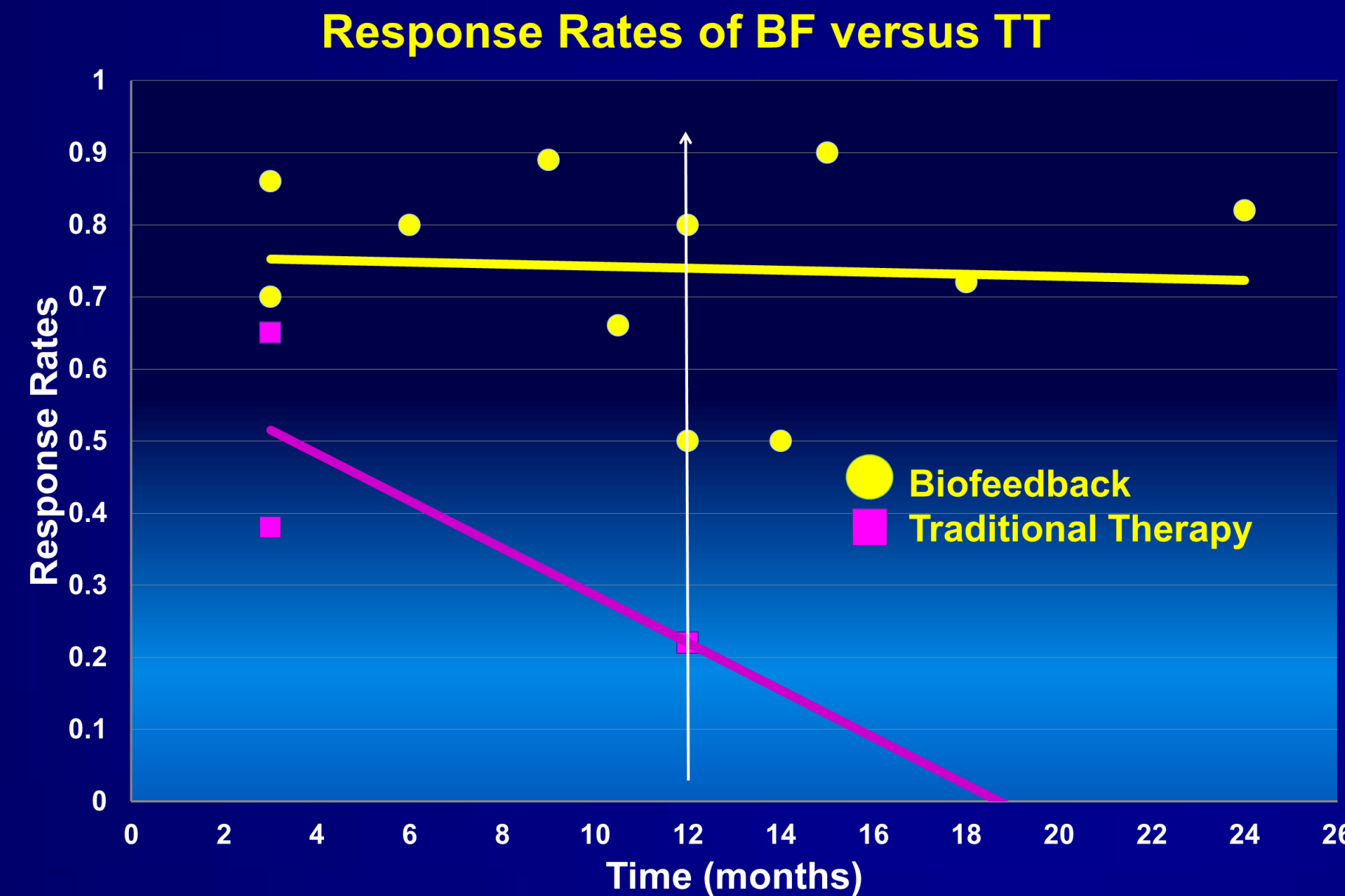
**Assumptions for expected cost:**

- Responders: Incur pharmacy costs +/- BF costs
- Non-responders Incur annual costs of CC +/- BF costs

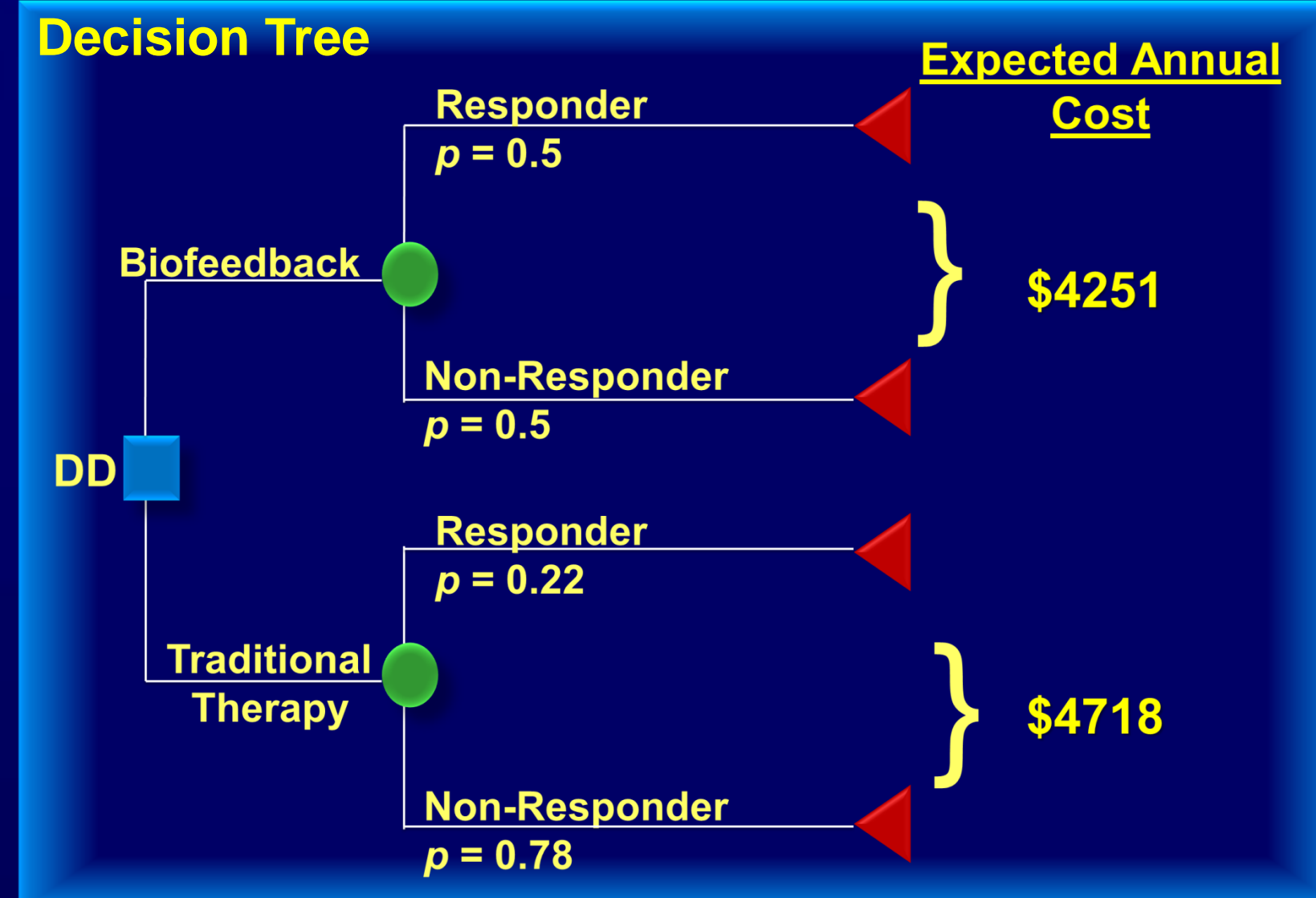
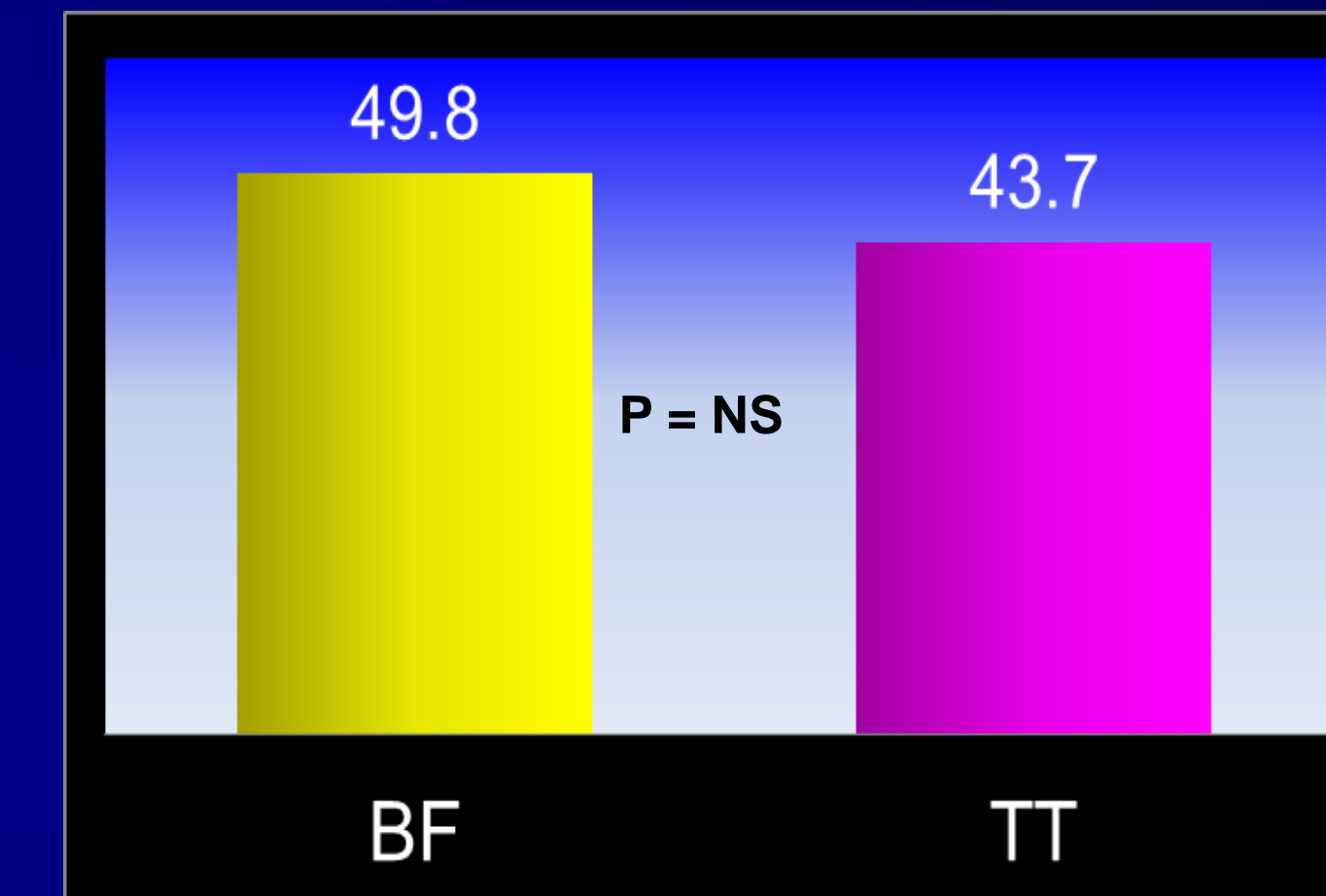
**Treatment effectiveness at 1 year:**

- VAS score assessing bowel symptom satisfaction & BM frequency

## Results



**Improvement in Bowel Symptom Satisfaction Score (by VAS) from baseline at 1 year**



**Expected cost savings at 1 year with BF vs. TT**

BF Response Rate at 1 Year	Expected Cost Saving
50%	\$467
74%	\$1527
80%	\$1791

## Summary

- Treatment response rates at one year are higher with BF than TT in DD
- Expected treatment costs to a third party payer for DD at one year are less with BF compared to TT
- Trend towards greater bowel symptom satisfaction (by VAS) with BF compared to TT at 1 year
- Significant improvement in bowel movement frequency with BF compared to TT at 1 year
  - Increase by 2.8 BMs/week vs. no change (p = 0.023)
  - Increase by 2.9 CBMs/week vs. no change (p = 0.005)

BM = bowel movement CBM = complete bowel movement

## Conclusions

- From a third party payer perspective biofeedback is cost saving and more effective than traditional therapy in the treatment of dyssynergic defecation