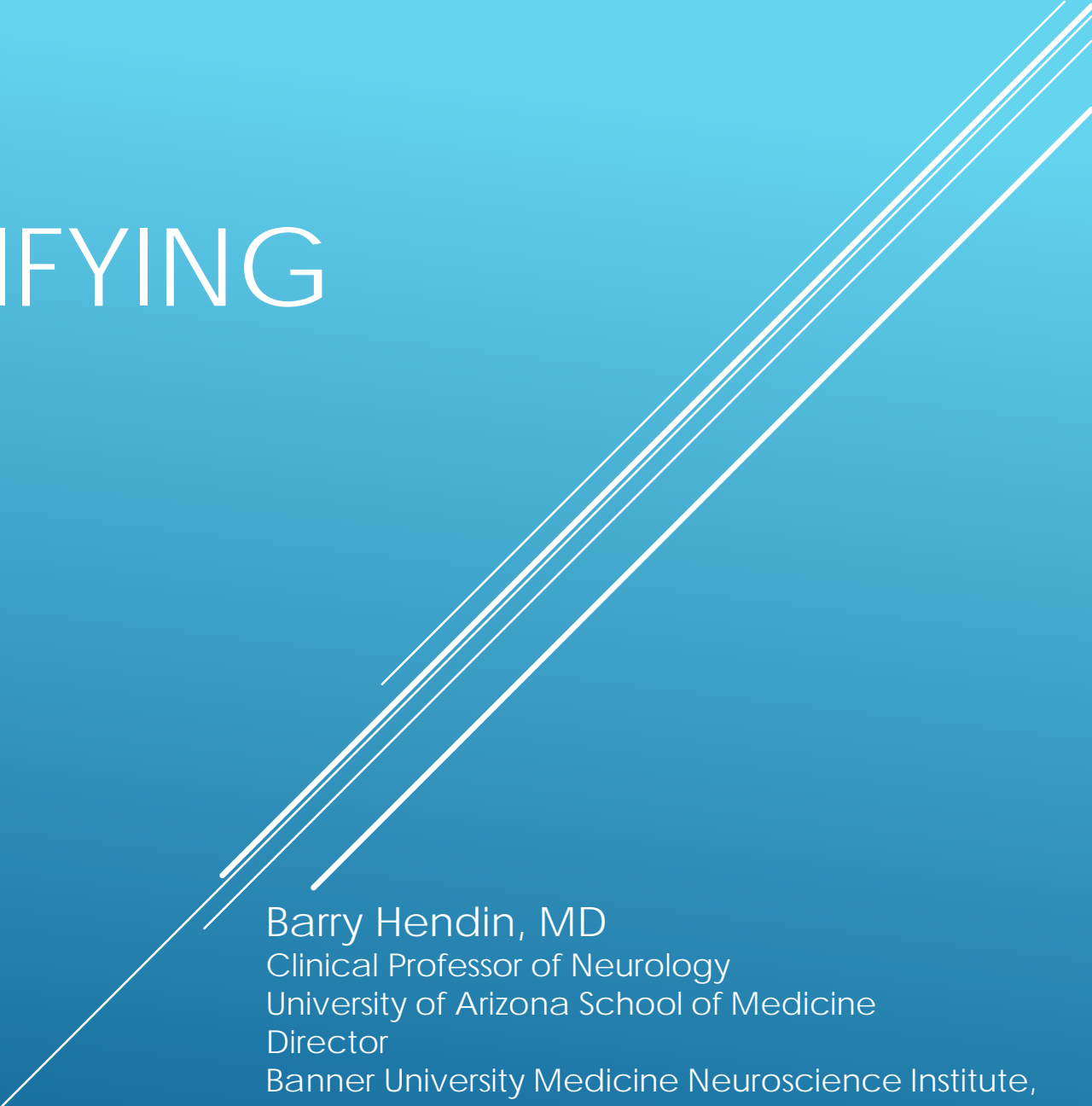



# MS DISEASE MODIFYING THERAPIES

Past, Present, and Future



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PGY 49

# PAST: UNDERSTAND IT, OBSERVE IT

- ▶ Relapse Therapies
    - ▶ Steroids or ACTH
  - ▶ Symptomatic Treatment
  - ▶ Wellness
  - ▶ Disease Modifying Therapies
    - ▶ None available
    - ▶ First DMT became available in 1993
  - ▶ Diagnostic tools
    - ▶ No CT
    - ▶ No MRI
  - ▶ Culture
    - ▶ Nihilism
    - ▶ Neglect
    - ▶ Delayed Diagnosis
- 

# PRESENT: SLOW IT DOWN

- ▶ FDA Approved Agents
    - ▶ Five Interferons
    - ▶ Copolymer (2)
    - ▶ Tysabri (natalizumab)
    - ▶ Gilenya (fingolimod)
    - ▶ Aubagio (teriflunomide)
    - ▶ Tecfidera (dimethyl fumarate)
    - ▶ Lemtrada (alemtuzumab)
    - ▶ Zinbryta (daclizumab)
    - ▶ Novantrone (mitoxantrone)
- 

## Interferon/Copolymer

### Positives

- Safety
- Long History

### Negatives

- Efficacy- ARR approximately 30%

## Orals

### Positives

- Convenience
- Efficacy- ARR approximately 50%

### Negatives

- Safety
- Tolerability

## Infusion

### Positives

- Increase efficacy

### Negatives


- Risks including PML and Autoimmunity

(Zinbryta [daclizumab])


# OCREVUS (OCRELIZUMAB): IS IT CHANGING THE CONVERSATION?

- ▶ Positives
    - ▶ High Efficacy
    - ▶ Low Risk
- 
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# HOW DO WE CHOOSE?

- When to initiate and with what? (Concept of early effective therapy)
    - Escalations vs. highly effective therapies to start
  - When to change therapies? RIO/NEDA
  - When to stop?
  
  - Don't go to sleep at the wheel; Monitor for suboptimal response!
- 
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# WELLNESS

- Comprehensive Center
  - Vitamin D
  - No smoking
  - Exercise
  - Weight Control
  - Alternative Therapies
- 
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# FUTURE: REPAIR IT, END IT

- ▶ Repair:
  - ▶ Markers
  - ▶ Induction: Stem Cell
  - ▶ Genetic Therapies
- 
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# SUMMARY

