Oral Antibiotic Therapy for Acne

Project leads:
Robert Dellavalle, Professor of Dermatology
Lisa Schilling, Professor of Medicine
University of Colorado School of Medicine
Team

Dermatology Research Fellows:
Chandler Rundle
Chante Aksut

Statistician:
Megan Branda

Participating Sites:
Dylan Ray (U. Colorado Hospital-Health Data Compass),
Sara Deakyne (Colorado Children's Hospital)

Dermatologist advisors:
John Barbieri (U. Penn), Jonathan Silverberg (Northwestern)
David Margolis (U. Penn)

Protocol advisors:
Chris Knoll, Patrick Ryan, Martijn Schuemie
Funding

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▪ Data Science to Patient Value (D2V)
Goals

▪ Update community on current status
▪ Recruit collaborating sites/partners
▪ Gain clarity on use of clinical vs. claims data
  ▪ -? Difference in query design, ? Overlapping patients
▪ Concerns regarding abx prescribing data (clinical data sources) – i.e., use of refill info in prescriptions, definitions ‘courses of antibiotics’
▪ Ensure data request to partners meets their criteria (i.e., de-identified data, efficient, SQL dialect)
▪ Ensure we follow OHDSI protocol
Study Objectives
Why take antibiotics?

- Photo credits Wikipedia
To prevent big nasty scarring pimples!

- Photo credits Wikipedia
Acne Disability
Deaths attributable to antimicrobial resistance every year by 2050

North America: 317,000
Latin America: 392,000
Europe: 390,000
Africa: 4,150,000
Asia: 4,730,000
Oceania: 22,000

Source: Review on Antimicrobial Resistance 2014
Course Duration

- Barbieri et al, JAAD 2016
Hypothesis

- Type and duration of oral antibiotic therapy will vary and often duration of courses will exceed guideline recommendations.
Methods

▪ Study Design
  ▪ Retrospective observational cohort study

▪ Data Sources
  ▪ Electronic health record or Claims via the OMOP CDM
  ▪ Time period: 1/1/2015 to 12/31/2019

▪ Data Collection
  ▪ SQL query
Inclusion Criteria

- **Age**
  - Persons between 12 and 40 years of age

- **Minimum observation period**
  - ≥12 months

- **Diagnosis**
  - Concept IDs representing acne
Inclusion Criteria

- Included antibiotic types and start dates
  - Sarecycline?

- Antibiotic duration
  - 1 course: ≥ 28 days and < 5 years
  - Prescription break of >30 days separates courses
Antibiotic Courses

Legend:
- >28-day prescription
- <28-day prescription
- >30-day break
- <30-day break

Days

Number of Antibiotics Courses
Exclusion Criteria

▪ Diagnoses that may require long-term antibiotic use
  ▪ Folliculitis decalvans, rosacea, etc

▪ Medications known to exacerbate acne
  ▪ Hormones, neuropyschotherapeutic drugs, targeted therapies, etc

▪ Oral antibiotic courses > 5 years
Primary Outcome

- To describe type of oral antibiotic prescribed
- Duration of oral antibiotic therapy used among patients with diagnoses of acne
- Characterize acne antibiotic pathways
- Long-term antibiotic class prescribing patterns
Limitations and Caveats

- Coding
  - ICD codes

- Country-to-country variation in antibiotic use
Protection of Human Subjects

- Use of de-identified data
- Necessity of ensuring data request to partners meets their criteria
Results Dissemination

- OHDSI website
- Peer-reviewed scientific journal
Study Protocol

- Draft protocol now available on OHDSI Wiki
Next Steps

▪ Invite collaborators!
▪ Receive commentary from collaborators
▪ Post finalized code on GitHub
▪ Obtain data from participating sites
Thank You!