Research Papers in Databases

Dr. Moe Kyaw Thu
Associate Professor
moe.kyawthu@newcastle.edu.my

25 March 2019
Choosing research paper

• Type of research papers
• Databases for research papers
• Impact Factor
Types of Research Articles

- Original Research Article
- Review Article
- Rapid Communications (Accelerated Communications)
- Case Reports/ Cross Sectional Surveys/ Cohort Studies/ Case Control Studies/ Randomized controlled trial

BMJ
- Original research studies
- RMR articles
- Analysis papers
- Education
- Minerva pictures
- Case reports
- Rapid response

https://www.springer.com/gp/authors-editors/journal-author/types-of-journal-manuscripts/1356
Original Research Article

- Title
- Abstract
- Introduction and Statement of the Problem
- Methodology
  - Limitations of Study
- Results
- Discussion & Conclusion
- References

https://libguides.bc.edu/edpaper/sections
One Month of Rifapentine plus Isoniazid to Prevent HIV-Related Tuberculosis


BACKGROUND
Tuberculosis is the leading killer of patients with human immunodeficiency virus (HIV) infection. Preventive therapy is effective, but current regimens are limited by poor implementation and low completion rates.

METHODS
We conducted a randomized, open-label, phase 3 noninferiority trial comparing the efficacy and safety of a 1-month regimen of daily rifapentine plus isoniazid (1-month group) with 9 months of isoniazid alone (9-month group) in HIV-infected patients who were living in areas of high tuberculosis prevalence or who had evidence of latent tuberculosis infection. The primary end point was the time to diagnosis of tuberculosis or death from tuberculosis or an unknown cause. Noninferiority would be shown if the upper limit of the 95% confidence interval for the between-group difference in the number of events per 100 person-years was less than 1.25.

RESULTS
A total of 3000 patients were enrolled and followed for a median of 3.3 years. Of these patients, 54% were women; the median CD4+ count was 470 cells per cubic millimeter, and half the patients were receiving antiretroviral therapy. The primary end point was reported in 32 of 1488 patients (2%) in the 1-month group and in 33 of 1498 (2%) in the 9-month group, for an incidence rate of 0.65 per 100 person-years and 0.67 per 100 person-years, respectively (rate difference in the 1-month group, -0.02 per 100 person-years; upper limit of the 95% confidence interval, 0.30). Serious adverse events occurred in 6% of the patients in the 1-month group and in 7% of those in the 9-month group (P = 0.07). The percentage of treatment completion was significantly higher in the 1-month group than in the 9-month group (97% vs. 90%, P < 0.001).
Original Research Article

• Title
• Abstract
• Introduction and Statement of the Problem
  – Limitations of Study
• Results
• Discussion & Conclusion
• References

One Month of Rifaxipentine plus Isoniazid to Prevent HIV-Related Tuberculosis


BACKGROUND
Tuberculosis is the leading killer of patients with human immunodeficiency virus (HIV) infection. Preventive therapy is effective, but current regimens are limited by poor implementation and low completion rates.

METHODS
We conducted a randomized, open-label, phase 3 noninferiority trial comparing the efficacy and safety of a 1-month regimen of daily rifapentine plus isoniazid (1-month group) with 9 months of isoniazid alone (6-month group) in HIV-infected patients who were living in areas of high tuberculosis prevalence or who had evidence of latent tuberculosis infection. The primary end point was the time to diagnosis of tuberculosis or death from tuberculosis or an unknown cause. Noninferiority would be shown if the upper limit of the 95% confidence interval for the between-group difference in the number of events per 100 person-years was less than 1.25.

RESULTS
A total of 3000 patients were enrolled and followed for a median of 3.3 years. Of these patients, 54% were women; the median CD4+ count was 470 cells per cubic millimeter, and half the patients were receiving antiretroviral therapy. The primary end point was reported in 32 of 1487 patients (2%) in the 1-month group and in 33 of 1498 (2%) in the 6-month group, for an incidence rate of 0.55 per 100 person-years and 0.67 per 100 person-years, respectively (one difference in the 1-month group, -0.02 per 100 person-years; upper limit of the 95% confidence interval, 0.39). Serious adverse events occurred in 5% of the patients in the 1-month group and in 7% of those in the 6-month group (P = 0.7). The percentage of treatment completion was significantly higher in the 1-month group than in the 6-month group (99% vs. 95%, P < 0.001).

CONCLUSIONS
A 1-month regimen of rifapentine plus isoniazid was noninferior to 9 months of isoniazid alone for preventing tuberculosis in HIV-infected patients. The percentage of patients who completed treatment was significantly higher in the 1-month group.

*The authors’ full names, academic degrees, and affiliations are listed in the Appendix. Additional reprint requests to Dr. Chaisson at the Center for Tuberculosis Research, Johns Hopkins University School of Medicine, 1500 Orleans St., Baltimore, MD 21287, or at rchaisson@jhsph.edu.

* A complete list of the members of the BRIEF TB/A5279 Study Team is provided in the Supplementary Appendix, available at NEJM.org.

Original Research Article

• Title
• Abstract
• Introduction and Statement of the Problem
• Methodology
  – Limitations of Study
• Results
• Discussion & Conclusion
• References

Worldwide, approximately 1000 persons with human immunodeficiency virus (HIV) infection die from tuberculosis each day, including many who are receiving antiretroviral therapy. Preventive therapy with isoniazid substantially reduces the risk of tuberculosis and death among patients with HIV infection and is recommended by the World Health Organization, but globally only a small proportion of those who are eligible to receive this therapy are actually treated. Clinicians and HIV treatment programs have been reluctant to implement isoniazid preventive therapy owing in part to concern about adherence to 6 to 9 months of treatment, drug toxicity, and the emergence of drug resistance. Shorter courses of rifampin-based preventive therapy are effective in HIV-infected patients, but the use of these regimens is also limited. In studies that used a urine test model of latent tuberculosis, daily treatments with rifapentine plus isoniazid for 1 month was as effective as 3 months of weekly rifapentine plus isoniazid and at least as effective as 6 months of isoniazid alone. In the BRIEF Trial (Brief Rifapentine–Isoniazid Efficacy for TB [Tuberculosis] Prevention [A5279] trial, we hypothesized that a 1-month regimen of daily rifapentine plus isoniazid would be noninferior to 9 months of isoniazid alone for preventing tuberculosis in patients with HIV infection and that the shorter regimen would have better adherence and fewer adverse effects.

METHODS

TRIAL DESIGN AND PATIENTS

From May 2012 through November 2014, we conducted this randomized, open-label, phase 3 noninferiority trial at 45 sites in 10 countries in Africa, Asia, South America, North America, and the Caribbean. Eligible patients had confirmed HIV infection, were 13 years of age or older, and either lived in an area with a tuberculosis prevalence of at least 60 cases per 100,000 population or had a positive test for latent tuberculosis. We excluded from the trial feeding women and patients with elevated liver enzyme levels or a body weight of less than 30 kg. Antiretroviral therapy with the use of efavirenz or nevirapine was permitted for the first month of trial participation, with any other regimen permitted after the first month. Patients were stratified according to antiretroviral-therapy status and CD4+ cell count at baseline.

Patients underwent randomization in a 1:1 ratio to receive either 4 weeks of rifapentine (at a dose of 300 mg daily for a weight of <35 kg, 450 mg daily for a weight of 35 to 45 kg, and 600 mg for a weight of ≥45 kg) plus isoniazid at a dose of 300 mg daily (1-month group) or 36 weeks of isoniazid alone at a dose of 300 mg daily (9-month group). All the patients received pyridoxine with each dose of a trial medication. Treatment was administered by the patients.

All the patients were followed until November 2017, which was when the last patient had been enrolled. Trial visits were conducted at weeks 2, 4, 8, 12, 16, 20, 24, and 36 and every 12 weeks thereafter. Patients in the 1-month group were allowed 8 weeks to complete treatment, whereas those in the 9-month group were allowed 54 weeks to accommodate possible interruptions because of toxic effects. Treatment completion was defined as patient-reported adherence to the trial regimen for the duration of the trial.

END POINTS

The primary end point in this time-to-event trial was the first diagnosis of active tuberculosis, death from tuberculosis, or death from an unknown cause. Secondary end points were safety, side-effect profile, death from any cause, and death from an unknown cause or causes unrelated to tuberculosis. Each end point was reviewed by one of two independent experts who were unaware of trial-group assignments. The criteria for the diagnosis of tuberculosis were defined in Appendix 100 of the Clinical Guidelines of the National Institute of Allergy and Infectious Diseases. Ascertainment of adverse events was conducted through week 150 in the two trial groups; additional pill counts and

25 March 2019
25 March 2019

Original Research Article

• Title
• Abstract
• Introduction and Statement of the Problem
• Methodology and stats – Limitations of Study
• Results
• Discussion & Conclusion
• References
Original Research Article

- Title
- Abstract
- Introduction and Statement of the Problem
  - Limitations of Study
- Results
- Discussion & Conclusion
- References
In this trial, we found that 1 month of daily rifapentine plus isoniazid was noninferior to daily isoniazid for 9 months for the prevention of tuberculosis in HIV-infected adults and adolescents. Patients in the 1-month group had a lower incidence of adverse events and were more likely to complete treatment than those in the 9-month group. Because the trial was open-label, the outcomes that were measured reflect the pragmatic effectiveness of the 1-month regimen. However, the high degree of adherence in the two groups suggests that the trial design also captured the clinical efficacy of the shorter regimen.

Despite extensive high-quality evidence supporting the efficacy of preventive therapy for tuberculosis and recommendations from the World Health Organization and others, the use of such an intervention worldwide has been low. In 2017, fewer than 1 million HIV-infected patients received preventive treatment, with an estimated 30 million eligible. Implementation of tuberculosis preventive therapy in patients with HIV infection has been hampered by operational concerns, poor adherence to long-duration regimens, concerns about drug resistance, drug-drug interactions with antiretroviral agents, and skepticism about the effect of this strategy during a time when antiretroviral therapy was being increasingly prescribed.

Several studies have shown that isoniazid therapy reduces the risk of death regardless of the receipt of antiretroviral therapy among HIV-infected patients.

In research settings, moderately good adherence was shown with longer durations of isoniazid preventive therapy, but adherence to 70% of the patients at increased risk for tuberculosis completed 6 to 9 months of isoniazid therapy in programmatic settings. Shortening treatment from 3 months with supervised weekly administration of rifapentine and isoniazid increased completion rates to 87 to 90% in research settings and to 82% in clinical practice. In our overall results, the increased duration of treatment decreased the risk of tuberculosis in HIV-infected persons, younger children, and pregnant women is not known. The overall tuberculosis incidence that was observed in our trial was lower than expected at approximately 0.70 per 100 person-years, which limited our ability to evaluate differences in subgroups with precision. In particular, the number of patients with a CD4+ count of less than 250 cells per cubic millimeter was small, and despite extensive high-quality evidence supporting the efficacy of preventive therapy for tuberculosis and recommendations from the World Health Organization and others, the use of such an intervention worldwide has been low. In 2017, fewer than 1 million HIV-infected patients received preventive treatment, with an estimated 30 million eligible. Implementation of tuberculosis preventive therapy in patients with HIV infection has been hampered by operational concerns, poor adherence to long-duration regimens, concerns about drug resistance, drug-drug interactions with antiretroviral agents, and skepticism about the effect of this strategy during a time when antiretroviral therapy was being increasingly prescribed.

Several studies have shown that isoniazid therapy reduces the risk of death regardless of the receipt of antiretroviral therapy among HIV-infected patients.
Original Research Article

• Title
• Abstract
• Introduction and Statement of the Problem
• Methodology – Limitations of Study
• Results
• Discussion & Conclusion
• References

25 March 2019
Review Article

• An article that summarizes the current state of understanding on a topic.
• It surveys and summarizes previously published studies, rather than reporting new facts or analysis.
Role of the Microbiota in Immunity and Inflammation

Yasmine Belkaid1,* and Timothy W. Hand2

1Immunity at Barrier Sites Initiative, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892, USA
2Mucosal Immunology Section, Laboratory of Parasitic Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892, USA

*Correspondence: ybelkaid@niaid.nih.gov
http://dx.doi.org/10.1016/j.cell.2014.03.011

The microbiota plays a fundamental role on the induction, training, and function of the host immune system. In return, the immune system has largely evolved as a means to maintain the symbiotic relationship of the host with these highly diverse and evolving microbes. When operating optimally, this immune system-microbiota alliance allows the induction of protective responses to pathogens and the maintenance of regulatory pathways involved in the maintenance of tolerance to innocuous antigens. However, in high-income countries, overuse of antibiotics, changes in diet, and elimination of constitutive partners, such as nematodes, may have selected for a microbiota that lack the resilience and diversity required to establish balanced immune responses. This phenomenon is proposed to account for some of the dramatic rise in autoimmune and inflammatory disorders in parts of the world where our symbiotic relationship with the microbiota has been the most affected.

"The states of health or disease are the expressions of the success or failure experienced by the organism in its efforts to respond adaptively to environmental challenges."—Rene Dubos, 1965

Introduction
Multicellular organisms exist as meta-organisms comprised of both the macroscopic host and its symbiotic communal microbiota. With an estimated composition of 100 trillion cells, relationships with these highly diverse microbial communities. In turn, the microbiota promote and calibrate multiple aspects of the immune system. When operating optimally, the immune system-microbiota alliance interweaves the innate and adaptive arms of immunity in a dialog that selects, calibrates, and terminates responses in the most appropriate manner. However, both the acquisition of a complex immune system and its reliance on the microbiota came at a price. Pathologies that increasingly affect humans.
Meta-analysis

What is a meta-analysis?

• Meta-analysis is the statistical procedure for combining data from multiple studies. When the treatment effect (or effect size) is consistent from one study to the next, meta-analysis can be used to identify this common effect. When the effect varies from one study to the next, meta-analysis may be used to identify the reason for the variation.

Why perform a meta-analysis?

• Decisions about the utility of an intervention or the validity of a hypothesis cannot be based on the results of a single study, because results typically vary from one study to the next. Rather, a mechanism is needed to synthesize data across studies.

• Narrative reviews had been used for this purpose, but the narrative review is largely subjective (different experts can come to different conclusions) and becomes difficult when there are more than a few studies involved. Meta-analysis, by contrast, applies objective formulas (much as one would apply statistics to data within a single study), and can be used with any number of studies.
Systematic review and meta-analysis

Effect of breakfast on weight and energy intake: systematic review and meta-analysis of randomised controlled trials

Katherine Sievert,1 Sultana Monira Hussain,1 Matthew J Page,2 Yuanyuan Wang,1 Harrison J Hughes,1 Mary Malek,1 Flavia M Ciuffitini1

ABSTRACT

OBJECTIVE
To examine the effect of regular breakfast consumption on weight change and energy intake in people living in high income countries.

DESIGN
Systematic review and meta-analysis

DATA SOURCES
PubMed, Ovid Medline, and CINAHL were searched for randomised controlled trials published between January 1990 and January 2018 investigating the effect of breakfast on weight or energy intake. Clinical trials.gov and the World Health Organization’s International Clinical Trials Registry Platform search portal were also searched in October 2018 to identify any registered yet unpublished or ongoing trials.

ELIGIBILITY CRITERIA FOR SELECTING STUDIES
Randomised controlled trials from high income countries in adults comparing breakfast consumption with no breakfast consumption that included a measure of body weight or energy intake. Two independent reviewers extracted the data and assessed the risk of bias of included studies. Random effects meta-analyses of the effect of breakfast consumption on weight and daily energy intake were performed.

RESULTS
Of 13 included trials, seven examined the effect of eating breakfast on weight change, and 10 examined the effect on energy intake. Meta-analysis of the higher total daily energy intake than those assigned to skip breakfast (mean difference 259.79 kcal/day, 78.87 to 440.71; 1 kcal=4.18 kJ), despite substantial inconsistency across trial results (P=80%). All of the included trials were at high or unclear risk of bias in at least one domain and had only short term follow-ups (mean period seven weeks for weight, two weeks for energy intake). As the quality of the included studies was mostly low, the findings should be interpreted with caution.

CONCLUSION
This study suggests that the addition of breakfast might not be a good strategy for weight loss, regardless of established breakfast habit. Caution is needed when recommending breakfast for weight loss in adults, as it could have the opposite effect. Further randomised controlled trials of high quality are needed to examine the role of breakfast eating in the approach to weight management.

STUDY REGISTRATION
PROSPERO registration number CRD42017057687.

Introduction
Obesity is considered to be one of the defining health issues of this time and is recognised as the most prevalent form of malnutrition worldwide with rapidly increasing rates globally. The association between obesity and increased risk of chronic diseases (eg, cardiovascular disease, diabetes, and osteoarthritis) means that it is the major public health challenge of the twenty-first century.
Fig 5 | Random effects meta-analysis of the mean difference in total daily energy intake (kcal/day), based on breakfast consumption or no breakfast consumption. (kJ=0.00418 MJ)
Case Reports/ Cross Sectional Surveys/ Cohort Studies/ Case Control Studies

• Case reports
  – Detailed histories of a small number of individual cases

• Case-control studies (Retrospective studies)
  – Compare histories of a group of people with a condition to a group of people without
  – Researchers start with an end point and work backward, figuring out what might have
    caused that outcome.

• Cohort studies (Longitudinal or Prospective Studies)
  – Follows a group of people to track risk factors and outcomes over an extended period of
    time
  – That's why they are often called "longitudinal" and "prospective" studies.

• Cross-sectional surveys
  – Take a random sample of people, assess the prevalence of an outcome and record
    information about them at one point in time
Case Reports/ Cross Sectional Surveys/ Cohort Studies/ Case Control Studies

• Case reports
  – Detailed histories of a small number of individual cases

• Case-control studies (Retrospective studies)
  – Compare a group of patients who have a disease to a group of people without it
  – researchers start with an end point and work backward, figuring out what might have caused that outcome.

• Cohort studies (Longitudinal or Prospective Studies)
  – Follows a group of people to track risk factors and outcomes over an extended period of time
  – That's why they are often called "longitudinal" and "prospective" studies.

• Cross-sectional surveys
  – take a random sample of people, assess the prevalence of an outcome and record information about them at one point in time
Case Reports/ Cross Sectional Surveys/ Cohort Studies/ Case Control Studies

- **Case reports**
  - Detailed histories of a small number of individual cases

- **Case-control studies (Retrospective studies)**
  - Compare histories of a group of people with a condition to a group of people without
  - Researchers start with an end point and work backward, figuring out what might have caused that outcome.

- **Cohort studies (Longitudinal or Prospective Studies)**
  - Follows a group of people to track risk factors and outcomes over an extended period of time
  - That's why they are often called "longitudinal" and "prospective" studies.

- **Cross-sectional surveys**
  - Take a random sample of people, assess the prevalence of an outcome and record information about them at one point in time
Case Reports/ Cross Sectional Surveys/ Cohort Studies/ Case Control Studies

• Case reports
  – Detailed histories of a small number of individual cases

• Case-control studies (Retrospective studies)
  – Compare histories of a group of people with a condition to a group of people without
  – Researchers start with an end point and work backward, figuring out what might have caused that outcome.

• Cohort studies (Longitudinal or Prospective Studies)
  – Follows a group of people to track risk factors and outcomes over an extended period of time
  – That's why they are often called "longitudinal" and "prospective" studies.

• Cross-sectional surveys
  – take a random sample of people, assess the prevalence of an outcome and record information about them at one point in time
Randomized controlled trial (RCT)

- A study in which people are allocated at random (by chance alone) to receive one of several clinical interventions.
- The people participating in the trial are randomly allocated to either the group receiving the treatment under investigation or to a group receiving standard treatment as the control.
Types of Research Articles

• Original Research Article

• Review Article

• Rapid Communications (Accelerated Communications)

• Case Reports/ Cross Sectional Surveys/ Cohort Studies/ Case Control Studies/ Randomized controlled trial

25 March 2019

https://www.springer.com/gp/authors-editors/journal-author/types-of-journal-manuscripts/1356
Databases
Search results

Items: 1 to 20 of 7641

1. Use of Coronary Computed Tomographic Angiography to Guide Management of Patients With Coronary Disease.
   PMID: 27081014  Free PMC Article
   Similar articles

2. Diagnostic and prognostic benefits of computed tomography coronary angiography using the 2016 National Institute for Health and Care Excellence guidance within a randomised trial.
   PMID: 28844992  Free PMC Article
   Similar articles

   Similar articles
Search results

Items: 1 to 20 of 2457

   Collet C, Grundeken MJ, Asano T, Onuma Y, Wijns W, Serruyts PW.
   PMID: 28844026
   Free Article
   Similar articles

   Foy AJ, Dhruba SS, Peterson B, Mandrola JM, Morgan DJ, Redberg RF.
   PMID: 28973101
   Free PMC Article
   Similar articles

   Azzalini L, Candido L, McCullough PA, Colombo A.
   PMID: 28941604
   Similar articles

4. Early coronary angiography in patients resuscitated from out of hospital cardiac arrest without ST-segment elevation: A systematic review and meta-analysis.
   A more detailed description of this article is not visible in the image.
Using Advanced search engine


https://www.youtube.com/watch?v=dncRQ1cobdc&feature=relmfu
A pioneer of open access publishing, BMC has an evolving portfolio of high quality peer-reviewed journals including broad interest titles such as BMC Biology and BMC Medicine, specialist journals such as Malaria Journal and Microbiome, and the BMC Series.

Expanding beyond biomedicine into the physical sciences, mathematics and engineering disciplines, BMC now offers a wider portfolio of subject fields on a single open access platform.

At BMC, research is always in progress. We are committed to continual innovation to better support the needs of our communities, ensuring the integrity of the research we publish, and championing the benefits of open research. BMC is part of Springer Nature.

https://www.biomedcentral.com
Impact Factor

25 March 2019
Impact Factor

• The impact factor or journal impact factor of an academic journal is a measure reflecting the yearly average number of citations to recent articles published in that journal.

\[
IF_{2014} = \frac{\text{Citations}_{2013} + \text{Citations}_{2012}}{\text{Publications}_{2013} + \text{Publications}_{2012}} = \frac{29753 + 41924}{860 + 869} = 41.456
\]
• The New England Journal of Medicine (impact factor: 79.258)
• Chemical Reviews (impact factor: 52.613)
• JAMA - Journal of the American Medical Association (impact factor: 47.661)
• Nature Reviews Cancer (impact factor: 42.784)
• Nature Reviews Immunology (impact factor: 41.982)
• Nature (impact factor: 41.577)
• Nature Reviews Genetics (impact factor: 41.465)
• Science (New York, N.Y.) (impact factor: 41.058)