

Presentation by

DR. VISHAL R. TANDON

MD,FIMSA,MAMS,CIMP, FIMS, FRCP(edn),FRCP(Glasgow)-UK



“Fundamental Steps of Research Paper Writing”

PROFESSOR

Post-Graduate Department of Pharmacology

Government Medical College, Jammu (J&K)

Editor In Chief

JK Science Journal of Medical Education and Research (EMBASE)

Journal Midlife Health (MEDLINE/PUBMED) 2020-2021

Writing the Research Paper

- **Necessary IEC Certificates/CTRI Number/Regulatory approval if applicable**
- **Title**
- **Abstract (Structured/Non Structured as per Requirement)**
- **Key Words (MeSH)**
- **Running Title**
- **Introduction**
- **Aim & Objectives**
- **Materials and Methods**
- **Results**
- **Discussion**
- **Limitation of the study**
- **Conclusion**
- **References**
- **Figs & Table**
- **Appendices**

Title of Research

- Simple specific and concise, but informative**
- Interesting and eye-catching but no over-claiming**
- Accurate and specific about paper's content**
- State the subject in full**
- May Indicate study design, animal species**
- Grammatically correct**
- Avoid long title (see previous article in journal)**
- Avoid abbreviations**
- Avoid repetition of aims and objective**
- Should not conclude the study**
- Should not State results**

What is wrong in the title

Incorrect

- To Evaluate Efficacy And Safety of *Caralluma Fimbriata* In Overweight And Obese Patients With Or Without Associated Co-Morbid Conditions in Jammu Region

Correct

- Efficacy and Safety of *Caralluma Fimbriata* In Overweight and Obese Patients: A Randomized Double Bind Placebo Control Study

What is wrong in the title



Incorrect

Metformin increases cancer specific survival in colorectal cancer patients-National cohort study.

Correct

- An Effect of Metformin on cancer specific survival in colorectal cancer patients- A National cohort study**

In-Correct

Is fasting plasma glucose in early pregnancy a better predictor of adverse obstetric outcomes than glycated haemoglobin?

Correct

Fasting plasma glucose Vs glycated haemoglobin in early pregnancy for prediction of adverse obstetric outcomes : A Comparative Clinical Study



In- Correct

First Indian study evaluating role of biochemical investigations and diagnostic tools in detection of adverse drug reactions.

Correct

Role of biochemical investigations and diagnostic tools in detection of adverse drug reactions: A Retrospective Observational Study

Abstract

- **A Precise, accurate, Structured or Unstructured summary of the paper**
- **Purposes**
 - **Included in several abstracting services (including Medline/ EMBASE/Scopus/DOAJ)**
 - **Helps readers browse and decide**

Abstract

- **A brief statement of chief points**
- **Short but intelligible**
- **Informative and interesting**
- **Avoid unnecessary detail**
- **Should convey Every thing of the original work precisely**
- **Accurate**
- **Should generate Interest to read full paper**

Abstract

Structured/unstructured

Length: 150-250 words

No references or abbreviations

Include main statistical conclusions

Structured abstract

- **Background**
- **Objective**
- **Study Design**
- **Methods**
- **Results**
- **Conclusion**



Keywords

- Words or short phrases used for cross-indexing, and retrieval
- 3-10 **identifiers** representing main concepts included in the article
- **Exclude words already in title**
- **Arrange alphabetically**
- **References of an Article gives insight for Key words**

Key words

- Use terms from the latest Medical Subject Headings (**MeSH**) list of Index Medicus.



U.S. National Library of Medicine National Institutes of Health

Contact NLM

- Databases
- Find, Read, Learn
- Explore NLM
- Research at NLM
- NLM for You

The World's Largest Med



Medical Subject Headings

MeSH Home | About MeSH | MeSH Browser | MeSH Files | Staff |

Home > Library Catalogs and Services > MeSH



MeSH Browser

- [Online searching](#) of MeSH vocabulary
- [About](#) the MeSH Browser
- [Suggestions](#) for authors' keywords



MeSH vocabulary suggestions.

- [MeSH vocabulary suggestions.](#)



What's New

- [2012 MeSH Files Available](#)



All About MeSH

- [MeSH Fact Sheet](#)
- [Publications and presentations](#) by MeSH staff
- [Introduction](#) to MeSH

Related Efforts

- [Unified Medical Language System \(UMLS®\)](#)
- [NLM Classification](#)
- [RxNorm](#)

Sir Bradford Hill's Questions

I	Introduction	Why did you start?
M	Methods	What did you do?
R	Results	What did you find?
A	and	
D	Discussion	What does it all mean?

Summery How to write

Introduction

- Essentially this section must introduce the subject
- Should reflect **Volume of the problem**
- Give a concise **background of the study**
- **Do not review literature extensively** but provide the most recent work that has a direct bearing on the subject. **Reflect the gap in the knowledge briefly**
- **Rationale and Justification** for research aims and objectives must be clearly mentioned without any ambiguity.
- What **new It is adding**
- **Significance and relevance** of study
- The purpose of the study should be stated at the end.

Example

We wish to suggest a structure for the salt of deoxyribose nucleic acid (D.N.A.). This structure has novel features which are of considerable biological importance.

Watson JD, Crick FHC. A structure for deoxyribose nucleic acid. Nature 1953; 171: 737-8.

Problems

- Historical details
- Frequently too long
- Too general and vague
- Contains ‘discussion’ material
- Mechanism
- Imitative (**Copying Some one**)
- Chemical Structures
- Details of the research design
- information that is not directly relevant to your study
- Problems other than the one being examined



How many Objectives

- **One or two maximum three**
- **Too Many Objective become difficult to meet and study start becoming directionless and purposeless and it decreases the chance of its successful completion**

Stating the objectives

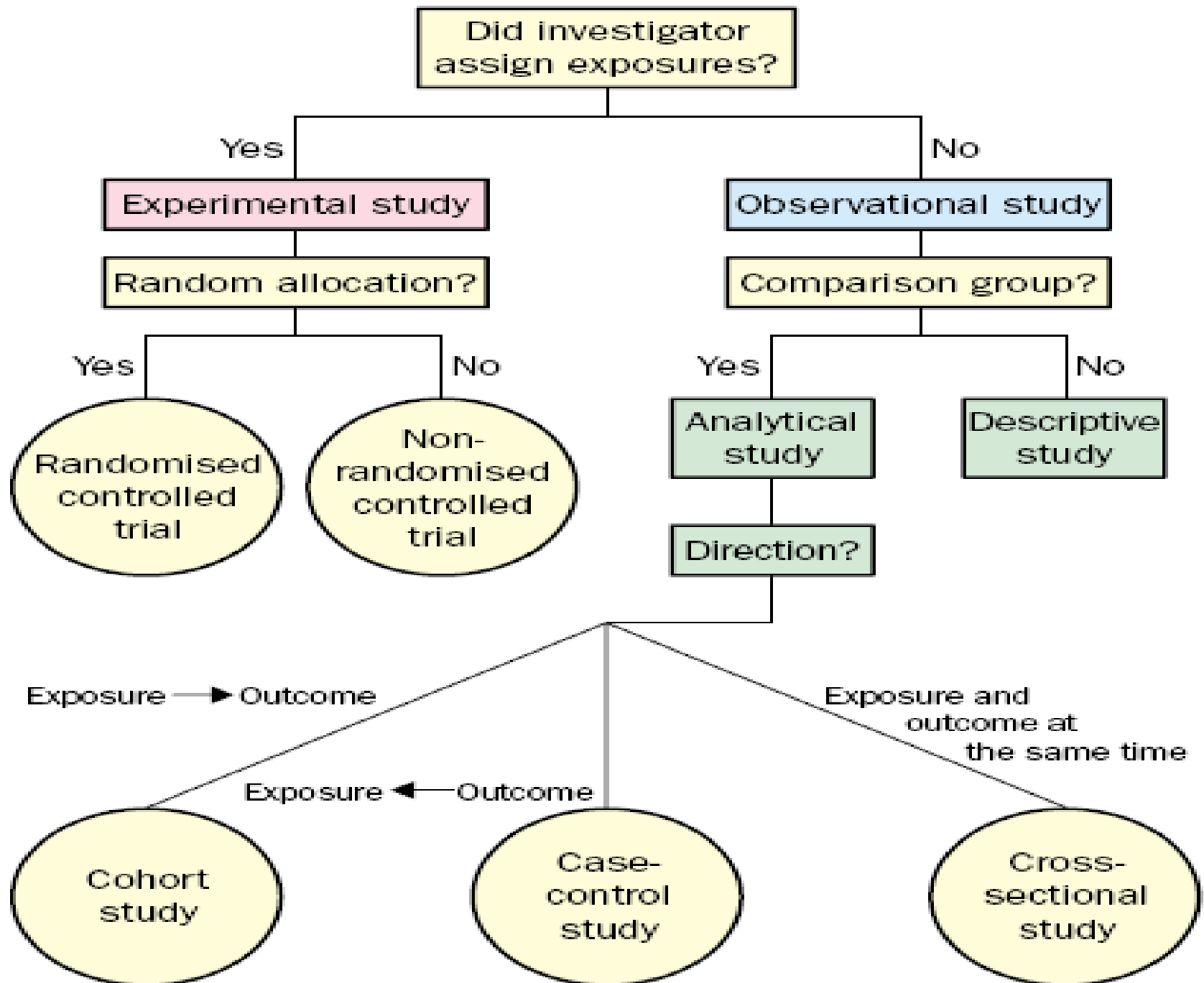
- Reason for doing the study
- **Use action verbs** : To determine, to compare, to verify, to describe, to establish, To evaluate, To find correlation, analyze
- **Avoid verbs** : To appreciate, to comprehend, to realize

Always better to have

- **Primary Objective**
- **Secondary Objectives**

Information to include

- **An expression describing an overall approach (To asses, to compare, to determine etc)**
- **Names of all medicine being evaluated**
- **Dose / dose range/ Regimen**
- **Disease being evaluated**
- **Type of patient being evaluated**
- **Purpose – Efficacy safety, pharmacokinetic**
- **Specific purpose- Superiority to placebo / Equivalence / Non Inferiority**





- **Study Design**
- **Randomization**
- **Blinding**
- **Time and duration of study**
- **Place of study and collaborating Department**
- **IRB/IEC Clearance/Regulatory Clearance**
- **Clinical trial registration Number**
- **Informed consent**
- **Define study population and number**
- **Explain protocol clearly**
- **Detail of Baseline Clinical/ Biochemical Screening**

- Inclusion criteria
- Exclusion criteria
- Define Study Groups allocation Clearly
- Detail of Methods with original references
- Clearly define if any modification made
- Basis of Dose selection – Important
- Principles of precaution and risk minimization
- Assessment of Outcomes- primary and secondary
- Very Important to Define Parameters of Evaluation and their Time protocol and their interpretation
- **CONSORT – Flow diagram**



CTRI India at NIMS (ICMR)

- CTRI is a primary registry of the International Clinical Trials Registry Platform (ICTRP) (<http://www.who.int/ictrp/search/en/>). Registered trials are freely searchable both from the WHO's search portal, the ICTRP as well as from the CTRI.
- All clinical trials conducted in India to be **prospectively** registered, i.e. before the enrolment of the first participant.
- It also accept registration of trials conducted in other countries in the region, which do not have a primary registry of its own.
- The Clinical Trials Registry- India (CTRI), hosted at the ICMR's National Institute of Medical Statistics (NIMS), **is a free and online public record system for registration** of clinical trials being conducted in India from 2007. (www.ctri.nic.in)
- Initiated as a voluntary measure, **since 2009, trial registration** in the CTRI has been made mandatory by the Drugs Controller General of India (DCGI).
- Editors of Biomedical Journals of **11 major journals of India declared that only registered trials would be considered for publication.**

Parallel study design With Placebo

PATIENTS OF COPD WITH OA

120 PATIENTS

Inhaled Salbutamol X 2WK+ Exercise +Local treatment of Joint 2 WK

RANDOMISATION

GROUP I n=60

Diacerine 50 mg daily+
Inhaled Salbutamol+
Exercise+ Local T/t

GROUP II n=60

Placebo+
Inhaled Salbutamol+
Exercise +Local Joint T/t

Post Drug **Objective Parameters** like lung functions (FEV_1 and FVC, FEV, FEF25-75) And **Subjective Parameters** like improvement in respiratory symptoms, QOL & safety (BP, HR, ADR) were assessed and Compared

STATISTICAL ANALYSIS

Patients above 55 years
Both sexes
Patients giving consent
COPD with OA
Stable COPD
FEV1 <60%
FEV1/FVC Ratio <70%
One Knee Joint Involved with mild to moderate OA

Chronic respiratory disease other than COPD, Asthma
Unstable respiratory status
Recent viral, bacterial Pulmonary infection
Continuous daily oxygen requirement
Congestive cardiac failure
Inability to discontinue COPD medication
Uncooperative
H/O sensitivity to any of the drugs
Patients not giving consent
Patients taking drugs likely to interact with the drugs under study
NSAID, Corticosteroids, Glucosamine or DA requirement must

Results

- **Start with demographic and baseline results**
- **Results of all experiments**
 - in natural order**
 - in subsections similar to methods and parameters evaluated**
- **Do not duplicate information**
 - text, tables, figures**
- **Statistical analysis**

Results

- *Should not include*
 - Any methods
 - Data for which methods are not included
 - Interpretation of data
 - References

Results

- Results may be presented in the form of
- Frequency distribution tables or
- Using diagrams such as bar diagram, pie chart, pictogram, histogram, line diagram, scatter diagram etc.

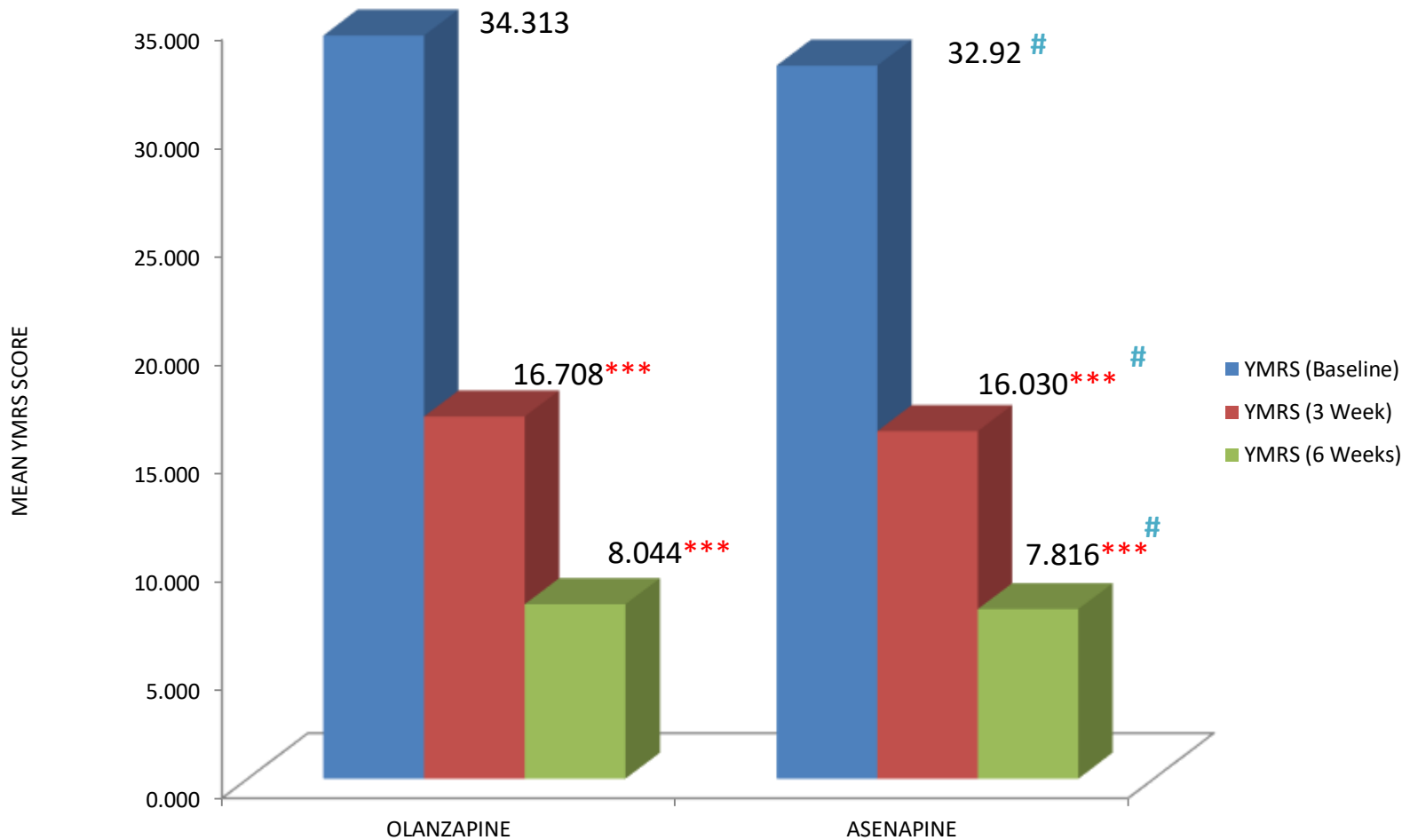
Base line Characteristics

TABLE 3: MEAN DIFFERENCE (% CHANGE) FROM RESPECTIVE BASELINES OBSERVED WITH OLANZAPINE AND ASENAPINE ON YMRS SCORE AT WEEK 3 AND 6

Variable	Drugs		Statistical Inference	
	Olanzapine (Mean ± SEM) (% Change)	Asenapine (Mean ± SEM) (% Change)	t	p
At 3 Weeks	-17.60 ± 0.93 ^{NS} (51.30)	-16.89 ± 0.75 ^{NS} (51.31)	-0.60	0.55 [#]
At 6 Weeks	-26.40 ± 0.65 ^{***} (76.94)	-24.64 ± 0.69 ^{***} (74.86)	-1.86	0.07 [#]

*The data is shown in Mean ± SEM; YMRS: Young Mania Rating Scale
Paired 't' test in comparison to respective baselines * p<0.05; ** p<0.01; *** p<0.001
Comparison between the groups at Baseline, 3 weeks and 6 weeks with Unpaired Student 't' test
† p<0.05; †† p<0.01; ††† p<0.001; #NS = Non Significant*

Fig. 1 EFFECT OF OLANZAPINE Vs ASENAPINE ON YMRS SCORE IN PATIENTS OF ACUTE MANIA



*The data is shown in Mean ± SEM; YMRS: Young Mania Rating Scale
 Paired 't' test in comparison to respective baselines * p<0.05; ** p<0.01; *** p<0.001; NS = Non Significant
 Comparison between the groups at Baseline, 3 weeks and 6 weeks with Unpaired Student 't' test*

† p<0.05; †† p<0.01; ††† p<0.001; # = Non Significant

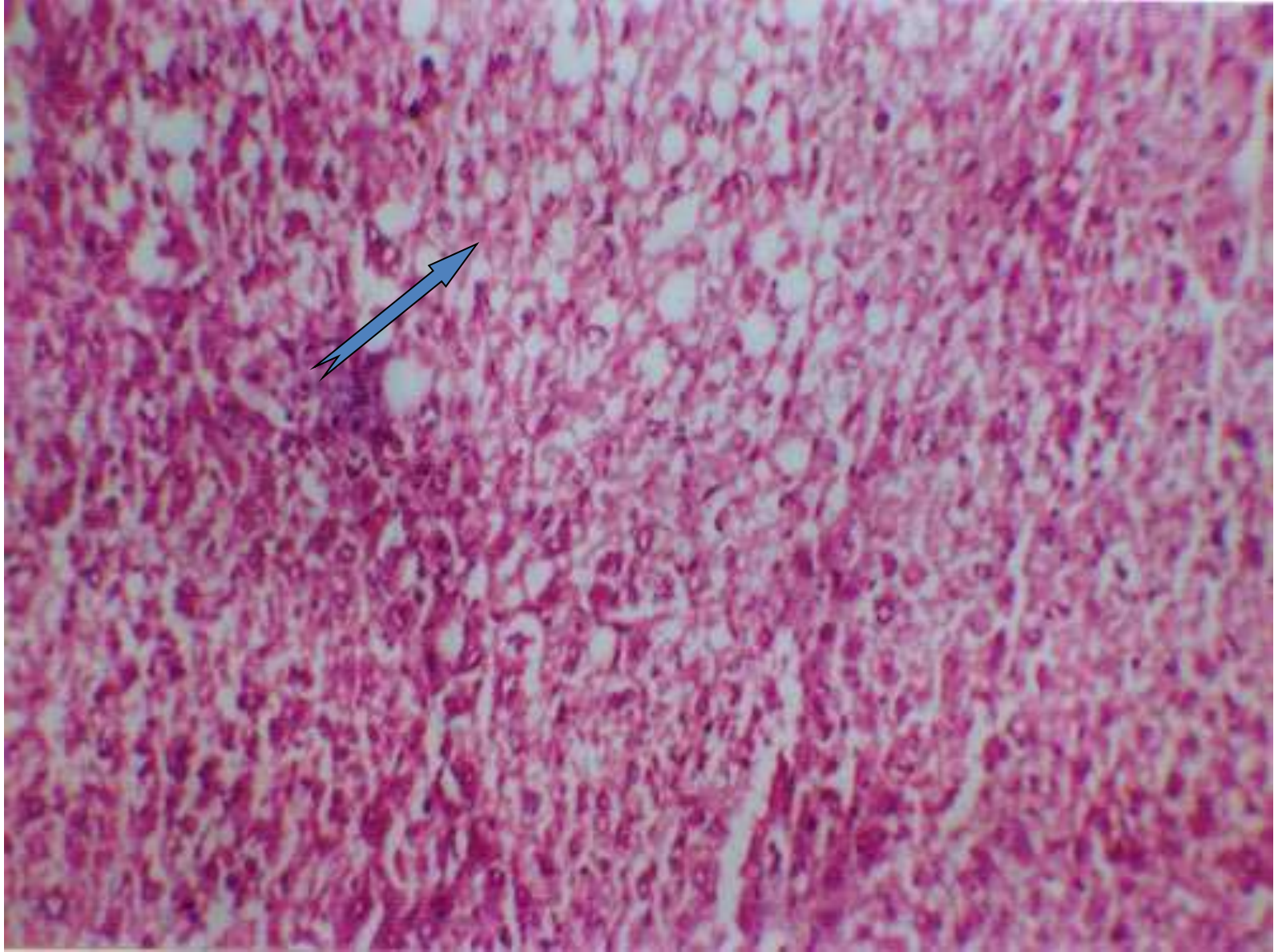


Figure 3 . Section of the liver tissue of rats treated with VNE (100 mg/kg. wt) and antitubercular drug challenge showing macrovesicular fatty change (H& E, 100 X)

Discussion

- First answer question posed in introduction
- Compare studies in agreement
- Discuss weaknesses and discrepancies
- Lay down Possible reason in discrepancies
- Lay down Possible Hypothesis / Explanation of the findings
- Discuss Unexpected Findings also
- Explain what is new without exaggerating
- Discuss perspectives, implications, Impact on available research and clinical practice
- Limitations of study

Discussion

Avoid:

Repetition of results

Too verbose, theoretical texts that are irrelevant to the research problem*

Inadequate discussions on the significant results

Failure to justify negative results

Conclusion

- **Be specific**
- **No hypothesis**
- **Finally conclude major results findings of study as per research question**

Efficacy and Safety of Asenapine Versus Olanzapine in Combination With Divalproex for Acute Mania: A Randomized Controlled Trial

OBJECTIVE : To compare the efficacy and safety of asenapine and olanzapine when used in combination with divalproex in patients with acute mania.

CONCLUSION: This study found that asenapine was an effective and well-tolerated atypical antipsychotic alternative to olanzapine in combination with divalproex for the short-term management of acute mania.

Referencing Styles

Some important referencing style in the medical sciences are:

- ***American Psychological Association (APA)***
(Author year Title Journal and vol and page)
- ***Chicago-style*** ("author-date" style)
- ***Harvard Style*** (alphabetical Referencing)
- ***Vancouver Style*** (numbered referencing style)



References Vs Bibliography



Reference Elements

- Authors (use et al. after 6 authors, if there are more than six authors, complete names should not be written. “et al” must be in italics)
- Article title (should be exact as existing)
- Journal name (should be in standard PubMed abbreviations, full journal name should not be written)
- Year
- Volume
- Page numbers (445-447 to be written as 445-47)

Singh JK, Bawa M, Kanojia RP, Ghai B, Menon P, Rao KL.
Idiopathic simultaneous intussusceptions in a neonate.
Pediatr Surg Int 2009;25:445-7.

Punctuation Marks

Coma followed by space after each author do not write *and* before the last author

Full stop after the last author followed by space and then the article title

Singh JK, Bawa M, Kanojia RP, Ghai B, Menon P, Rao KL.

Idiopathic simultaneous intussusceptions in a neonate.

Full stop followed by space

Pediatr Surg Int 2009;25:445-7.

Full stop at the end of the ref.

Single space between the journal abbreviation and the year, place no other punctuation marks

Hyphen to separate the page no.

Semicolon ; after the year without any space

Colon : after volume no. without any space

Reference checking facility on the www.journalonweb.com website

- The manuscript submission web site offers the authors a method where they can check the correctness of the references they have used
- The following slides will demonstrate how to use it

Citing References in the text

- References should be numbered using Arabic numerals in box parentheses e.g. [1] in the order of appearance in the text as a superscript.

diameter of 6 to 7 mm and the renal artery measures 2.8 mm.^[11] WT surgery is a safe and partially standardized procedure. However, major bleeding and vascular injuries can occur. The frequency of vascular injuries has been reported as 1.5% in the NWTs-3 and 4.^[12, 13] Severe hemorrhage occurs at a higher rate. Further, there exists a hidden surgical mortality.^[14]

Book Reference

Authors of the chapter



Title of the chapter



- **Miyano T, Kobayashi H, Chen SC. Long term results of biliary atresia. In: Gupta DK, editor. Text Book of Neonatal Surgery, 1st ed. New Delhi: Modern Publishers; 2000. p. 288-91.**

Name of the book



City of publication



Name of publisher



Edition no



Year and page no.



Chief Editor of the book



The punctuation marks are to followed as seen in this example

- **Journal article on the Internet**
 - **Abood S. Quality improvement initiative in nursing homes: the ANA acts in an advisory role. Am J Nurs [Internet]. 2002 Jun [cited 2002 Aug 12];102(6):[about 1 p.]. Available from: <http://www.nursingworld.org/AJN/2002/june/Wawat ch.htm>Article**

- Digray NC, Mengi Y, Goswamy HL. Hydrocephalus in children. Analysis of 50 cases. JK Practitioner 1998 (in press).
- Goswamy HL, Mengi Y, Digray NC. Organisation of Trauma Care. Presented at the meeting of North Chapter of ASI at Jammu, J&K–India, Oct 24–25, 1998.

How to Improve



- Good writing is rewriting
- Self review after a gap of few days
- Peer Review
- **Your supervisor/professor is not here to teach you basic grammar and spelling**
- **Restrict to word count as per the type of article**

- Use grammar check software
<http://www.grammarcheckforsentence.com>

- Plagiarism Checker software- <https://www.quetext.com/>

- **Reference checking facility on the www.journalonweb.com website**

Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publications

Statement of Purpose >

[About the URM](#)

[Potential Users](#)

[How to Use the URM](#)

Ethical Considerations >

[Authorship and Contributorship](#)

[Editorship](#)

[Peer Review](#)

[Conflicts of Interest](#)

[Privacy and Confidentiality](#)

[Protection of Human Subjects and](#)

[Animals in Research](#)

Publishing & Editorial Issues >

[Obligation to Publish Negative](#)

[Studies](#)

[Corrections](#)

[Copyright](#)

[Overlapping Publications](#)

[Correspondence](#)

[Supplements](#)

[Electronic Publishing](#)

[Advertising](#)

[General Media](#)

[Obligation to Register Clinical Trials](#)

Manuscript Preparation >

[Preparing for Submission](#)

[Sending the Submission](#)

References >

[Print References](#)

[Other Sources](#)

ICMJE Member Publications & Organizations



[Annals of Internal
Medicine](#)



[British Medical Journal](#)



[Canadian Medical
Association Journal](#)



[Croatian Medical
Journal](#)

[Journals Following the URM >>](#)



Recent Announcements, Updates & Editorials

- ✓ [ICMJE Seeking 2 New Member Journals: Extended Deadline for Applications](#) (09/09)
- ✓ [Update on FDAAA from ClinicalTrials.gov](#) (06/08)
- ✓ [All Announcements, Updates & Editorials](#)

Frequently Asked Questions at a Glance

- ✓ Will the ICMJE consider clinical trial results posted at ClinicalTrials.gov in compliance with the Food and Drug Administration Act of 2007 to be prior publication? [FULL ANSWER](#)
- ✓ How do I obtain a print copy of the

Prepare Manuscript as per

STROBE Guidelines

(Strengthening the reporting of observational studies in epidemiology)
Observational studies including cohort, case-control, and cross-sectional studies (25 Point Check list)

<https://www.strobe-statement.org/index.php?id=available-checklists>

CONSORT Guidelines (25 Point check list) Consolidated Standards of Reporting Trials

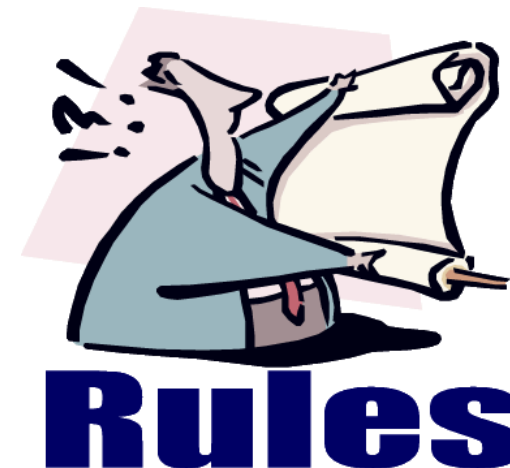
Randomized controlled trials

<http://www.consort-statement.org/>

CARE Guidelines

Case Report

<https://www.care-statement.org/checklist>



Check References

Home...

[Main page](#)

[Login as reviewer](#)

New manuscript...

[Instructions](#)

[Checklist](#)

[Download Copyright/Contributor form template](#) NEW

[Upload Copyright/Contributor form](#) NEW

[Check references](#)

[Submit a new manuscript](#)

[Incomplete submission\(s\)](#)

Symposia...

[Current symposia](#)

Submitted manuscript(s)...

[Manuscripts under review](#)

[Manuscripts for revision](#)

[Under issue preparation](#)

[Previous manuscripts](#)

[Published articles](#)

Accepted manuscripts...

[List](#)

[Letter in response](#)

[Manuscripts for proofs](#)

Personal details...

[Messages](#)

You can check and verify accuracy and style of references.

- The style as well as bibliographic elements should be 100% accurate to get the references verified from the system. A single spelling error or addition to verifying the reference.
- Only the references from journals indexed in PubMed would be checked.
- Enter each reference in new line, without a serial number.
- Maximum 15 reference at time.

Example:

Sheahan P, O'leary G, Lee G, Fitzgibbon J. Cystic cervical metastases: Incidence and diagnosis using fine needle aspiration biopsy.

[Download](#) a PowerPoint presentation on common reference styles and using the reference checker [Courtesy Dr. Ravi Kanojia]

Write or paste the ref
in this box
then click the tab below



Check References

Clear

**Publish
and
Flourish**

