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[3] Fleischer W, Reimer K. Povidone iodine antiseptics. State of the art. *Dermatology* 1997;195 Suppl 2:3-9.

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[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. *J Periodontol* 2000;71:1792-801.

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[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. *Dent Mater* 2006.

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Curriculum of Anaesthesiology at the Undergraduate Level: How Effective is the Current Scenario?



Anaesthesiology is a unique specialty in medical practice of recent origin since the demonstration of successful ether anesthesia by William Thomas Green Morton on 16th October 1846. The discovery of action of curare at the myoneural junction by Claude Bernard in 1857 has revolutionized the technique of general anesthesia by the use of neuromuscular blocking drugs. Use of cocaine as local anaesthetic by Carl Koller in 1884 and the introduction of clinical spinal anesthesia by August Bier by the same drug in 1898 has taken the speciality to a different angle. Though the speciality has evolved to provide pain relief during surgical procedures, the clinical skill acquired by the anesthesiologist has now encroached outside

the operation theatres like the postoperative care rooms, the intensive care units, cardiopulmonary resuscitation areas and the pain clinics.

The undergraduate medical curriculum is aimed at providing primary medical care to the patient with basic knowledge of all specialties needed for this. It also creates interest of the candidate in various specialties, which later prompt them to choose their specialty for later postgraduate studies too.

There is no consensus regarding the optimal curriculum or duration or content required for the undergraduate medical education and hence it varies from place to place. To achieve the goal of patient care like perioperative management, critical care, pain therapy and cardiopulmonary resuscitation skills, adequate training in anaesthesiology should start from the undergraduate level itself.

Unfortunately, these knowledge to be learnt from the anaesthesiologist has not gained its due credit and importance during the undergraduate

medical education period. This deprives the patient adequate medical treatment and does not generate the necessary aptitude and interest of these undergraduates in choosing anaesthesiology as their future subject of studies also. This probably is the main reason for the lack of qualified anesthesiologists in a developing country like India.

Anesthesiology is considered as a stressful specialty. The reason may be due to dealing with the patient's life and death during the entire perioperative period, with limited recognition of their stressful job. This probably adds to the scarcity of qualified persons in anaesthesiology practicing this specialty.

Currently, in our country, anaesthesia education at the undergraduate level is often neglected, when compared to other basic specialties like medicine, surgery, obstetrics & gynecology and pediatrics. The reason may be the thinking that anesthesia does not come into the routine stream of basic patient care. In fact,

anesthesia education involves not only the perioperative medical care, but a wide spectrum of medical care including cardiopulmonary resuscitation, critical care, pain therapy, trauma and airway management. This thinking should bring the position of anaesthesiology to the mainstream specialty subject of undergraduate medical education.

At present, during the undergraduate training period, there are two weeks of clinical posting and around twenty hours of lecture classes in the subject. During the internship period, they get two weeks of practical training. This seems to be inadequate to teach such a spectrum of areas involved in this subject. Further, since there is no separate theory or clinical examination in the subject, there is a natural tendency for students as well as the teachers to take the subject in a very light manner.

What is the solution to this problem? More stress has to be paid for the inclusion of anaesthesiology as a major subject in the undergraduate medical education. There should be at least one month of clinical postings in the specialty to train them various aspects of resuscitation, airway management and other skills. There should be at least two hours of lecture classes in a week during one of the semesters. After this, there should be a separate examination both in theory and practical, exclusively for anaesthesiology. The internship residency programme should incorporate minimum of one month of posting in anaesthesiology to gain the practical skills. The medical curriculum should be modified to attain this goal. Above all, it is the duty of the faculty of the specialty to take keen interest to create the aptitude and skill to their students in the subject.

In fact, the Delhi University has proposed anaesthesia examination as a separate subject in the ninth semester, subject to the approval of the Medical

Council of India and the faculty of Medical sciences of the university. This would probably be positive step in this direction, which can be a model for the other Indian Universities too.

Editor-in-Chief

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Pioneer of Paediatric Anesthesia: Gordon Jackson Rees**Sunil Mhaske****Abstract**

Gordon Jackson Rees, known to all his friends as 'Jack', was born on 8 December 1918. He was educated at Oswestry School and entered the University of Liverpool to study medicine in 1937, and qualified M.B.Ch.B. in late 1942. His scholastic achievements, by his standards, were modest and gave little hint of his later academic brilliance and practical innovative ability. Early in 1943, Jack was called up into the Royal Air Force medical branch and served as a station medical officer before being sent to the Radcliffe Infirmary, Oxford, to study anaesthesia under Professor Robert Macintosh and William Mushin. He obtained the one part Diploma in Anaesthetics in 1946. He became a consultant anaesthetist to the Royal Liverpool Hospitals in 1949 and, on the invitation of Professor Cecil Gray, joined the new University Department of Anaesthesia as a part time demonstrator. The current article is to enlighten the work of this brilliant "Pioneer of paediatric anaesthesia"

Keywords: Pediatric anaesthesia; Gordon Jackson; Triad of anesthesia.

Introduction

Gordon was a consultant anaesthetist to the Royal



Liverpool Hospitals in 1949 and joined the new university department of anaesthesia as a part-time demonstrator. Together with Professor Cecil Gray, using different drugs to produce specific effects, he introduced the revolutionary concept of the "triad of anaesthesia." Shortly afterwards Jack, as he was known, was persuaded to help develop paediatric anaesthesia. The so-called Jackson Rees technique of paediatric anaesthesia initially developed as a result of his experiences in adult anaesthesia and an intense desire to humanise the management of children in hospital. This technique soon became known throughout other paediatric centres and, as a result, he travelled widely as a visiting professor and invited

lecturer, and was presented with many prestigious awards. He became known as a superb speaker, a witty panelist, and a persuasive debater. His writings are a model of lucidity and a pleasure to read, though he confessed that he was a reluctant writer.[1]

Gordon Jackson Rees was born on 8 December 1918 in Oswestry Shropshire. He was educated at Oswestry School and entered the University of Liverpool to study medicine in 1937. He joined to the Royal Air Force medical branch and obtained the Diploma in Anaesthesia in 1946.

He became a consultant anaesthetist to the Royal Liverpool Hospitals in 1949. He introduced the new concept of the "triad of anaesthesia." He is

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remembered as one of the pioneers and developers of paediatric anaesthesia and was known with Gray for the "the Liverpool technique" Also he developed Jackson Rees modification of the Ayres T-piece for the ventilation of babies and small children.

Jack assisted to Miss Forshall, a paediatric surgeon with whom he developed the paediatric anesthesia branch. He had an intense desire to humanise the management of children in hospital.

In 1950, he published an article in the *British Medical Journal* on Neonatal Anesthesia. It gave him wide publicity as a pediatric anesthetist.[1,2]

Positions

- Fellow of the Faculty of Anaesthetists of the Royal College of Surgeons of England, Fellow of the Faculty of Anaesthetists of the Royal Australian College of Surgeons, Fellow of the Faculty of Anaesthetists of the Royal College of Surgeons of Ireland.
- Fellow of the Royal College of Physicians of London.
- Fellow of the Royal College of Paediatrics and Child Health.

Honors

- Awarded by the Medal for the Faculty of Anaesthetists of the Royal College of Surgeons of England

- Frederick Hewitt Medal of the Royal College of Surgeons of England
- Henry Hill Hickman Medal of the Royal Society of Medicine, London
- John Snow Medal of the Association of Anesthetists of Great Britain and Ireland
- Robert M. Smith Award of the American Academy of Pediatrics.
- Founder member and later a President of the Association of Paediatric Anaesthetists of Great Britain and Ireland
- First President of the federation of Association of European Associations of Paediatric Anaesthesia.
- Honorary citizen of the ancient university city of Coimbra, Portugal

Dr Jackson Rees died on 19 January 2001.

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2. Thomas Cecil Gray CBE KCSG FRCP FRCS FRCA and Gordon Jackson Rees FRCA FRCP FRCPC. Major contributors to post-resuscitation care. *Resuscitation* – official journal of European Resuscitation Council, Received 20 July 2006; accepted 20 July 2006.

An Overview of Systematic Reviews and Meta-analyses on Diabetic Neuropathy: A Quantitative Cross-Sectional Analysis

Kumar Senthil P.*, Adhikari Prabha**, Jeganathan***, D'Souza Sydney C.****, Misri Z.K.*****

Abstract

Background: Evidence informed practice relied upon evidence from systematic reviews and meta-analyses as the highest in the hierarchy in order to inform clinical practice decisions in foot and ankle rehabilitation in people with Diabetic peripheral neuropathic pain (DPNP) and Painful diabetic peripheral neuropathy (PDPN). **Purpose:** This study aimed to perform a systematic review and quantitative content analysis of systematic reviews on DPNP and PDPN. **Materials and Methods:** The extracted data about every included study included: journal, year of publication, number of authors, country of manuscript origin, goal of article (evaluation or intervention or both), subtypes of intervention (medical, surgical, or allied health), population characteristics (homogeneous or heterogeneous), and professional dimension. **Results:** There were 36 systematic reviews found, most of which were published from developed countries, in many scientific journals across the past 15 years, with lesser number of authors, with search strategy that utilized limited number of databases, included few studies, and they were predominantly on medical interventions.

Conclusion: The few systematic reviews and meta-analyses on DPNP and PDPN provided evidence information for decision making towards evaluation and management of foot and ankle dysfunction in this population.

Key words: Evidence-based diabetes care; Diabetic peripheral neuropathic pain; Foot and ankle dysfunction; Painful diabetic peripheral neuropathy.

Introduction

Clinical research on foot and ankle is evolving through a phase of ongoing paradigm shift towards evidence-informed practice (EIP) where individualized therapy prescription in evaluation and management was to be given with a shared self-reflective clinical reasoning-based decision making considering client preferences and findings from current scientific research evidence.[1-4]

EIP relied upon evidence from systematic reviews and meta-analysis of randomized controlled trials as the highest in the hierarchy in order to inform clinical practice

decisions in foot and ankle rehabilitation (FAR).[5] Analysis of reporting status for systematic reviews provides valuable information on status of peak of evidence pyramid necessary for facilitation of policy making in the area under focus.[6]

One of the common complications of the global epidemic of diabetes mellitus is the Diabetic peripheral neuropathy (DPN) which manifests as lower extremity peripheral nerve dysfunction affecting the foot and ankle.[7] Hence there is need to evaluate

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systematic reviews on DPN so that EIP in FAR could be effectively implemented. The objective of this paper was to perform a quantitative explorative overview of systematic reviews and meta-analyses on DPN.

Materials and Methods

Study Design

Descriptive systematic overview

Search methods

Two independent reviewers performed literature search, extracted data according to a pre-decided checklist and performed data synthesis with an ongoing mutual consensus for disagreements at every stage of the review process.

Search Strategy

The search terms “(neuropathy[Title] OR neuropathic [Title]) AND (diabetes [Title] OR diabetic[Title])” were used through advanced search feature[8] of PubMed database with search filters[9] activated for Systematic Reviews, Abstract available, and English language publications.

Data Extraction and Synthesis

The obtained articles were considered as systematic review if they fulfilled four criteria: specified criteria for inclusion of studies, specific search strategy mentioning databases, reporting results by mentioning number of included studies, with or without meta-analysis.

The selected reviews were grouped and subgrouped as follows: country of publication, year of publication, number of authors, goal of study, professional dimension, type of population, number of databases, and number of included

studies. A similar approach to data synthesis was previously used by Kumar *et al.*[10]

Results: Main Findings

The initial list of 73 articles was scrutinized and a final list of 36 articles[11-46] was included for data extraction and synthesis. The 37 excluded articles were either not systematic reviews (N=28) or they were not on diabetic neuropathy (N=9).

Journals

A total of 30 journals published the 36 systematic reviews and amongst them, ANT had one article[41], AP had one article[35], BMCN had two articles[33,37], BMJ had one article[40], CDSR had 4 articles[14,21,38,43], CJP had one article[16], CMRO had one article[23], DC had two articles[68,72], DFA had one article[15], DM had one article[45], DRCP had two articles[18,24], EJE had one article[12], EODS had one article[25], FK had one article[20], IJE had one article[17], JAMA had one article[31], JDC had one article[31], JE had one article[11], JFAS had one article[30], JGIM had one article[34], JGPT had one article[19], JPSM had one article[42], JRM had one article[26], JVS had one article[32], NJM had one article[28], P had one article[22], PM had one article[39], PO had one article[13], RAPM had one article[36] and SMW had one article[27] (Figure 1).

Years of Publication

The systematic reviews were published from 1996[45,46] onwards to 1999[44], 2000[42,43], 2005[41], 2007[39,40], 2008[35-38], 2009[30-34], 2010[23-29], 2011[19-22] until 2012[11-18] (Figure 2).

Figure 1: Comparison of Number of Articles between Journals

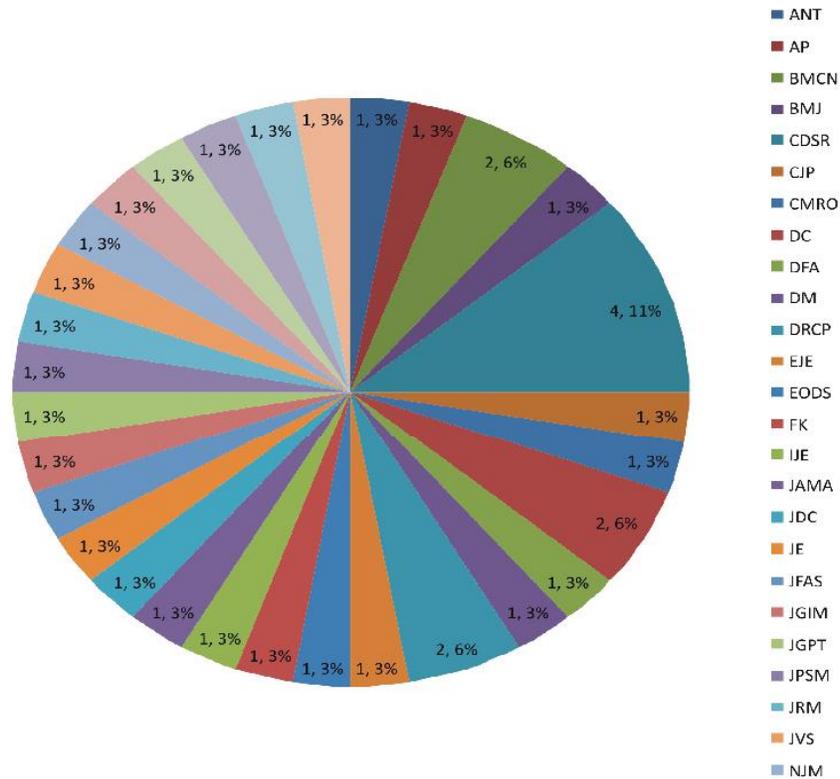
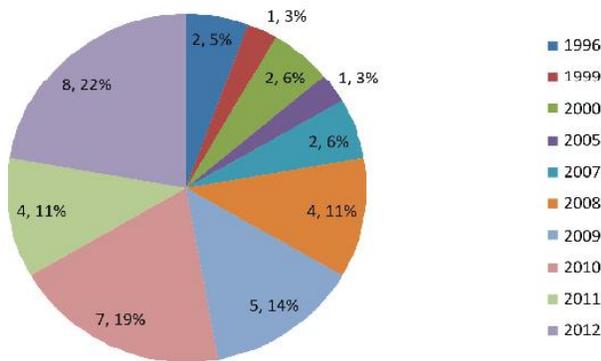


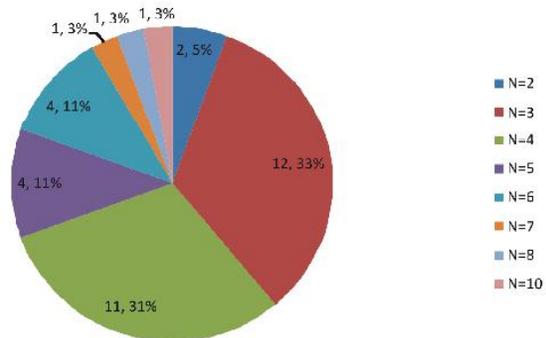
Figure 2: Comparison of Number of Articles between Years of Publication



Number of Authors per Article

There was no consistent pattern for number of authors per article found for the systematic reviews, with two authors[15,30], three authors[18,20,21,23,26,32,34,35,40,41,44], four authors [11,12,14,16,24,28,29,31,37,42,43], five authors[17,22,27,36], six authors[19,25,

Figure 3: Comparison of Number of Articles between Number of Authors per Article



39,46], seven authors[13], eight authors[33] and ten authors[45] (Figure 3).

Nationality of Corresponding Author

The corresponding authors for reviews were from 10 countries, and Austria had one article[26], Canada had one article[29], China had 6 articles[11-

Figure 4: Comparison of Number of Articles between Countries

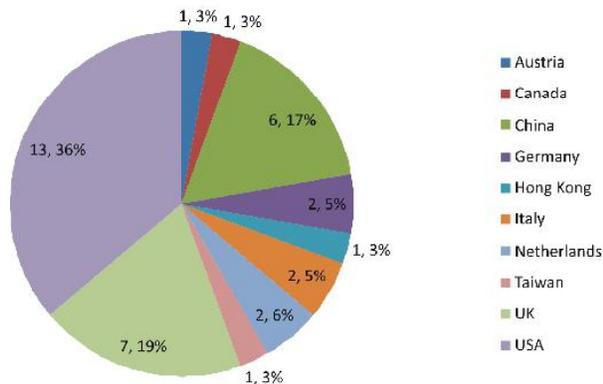


Figure 7: Comparison of Number of Articles between Interventions

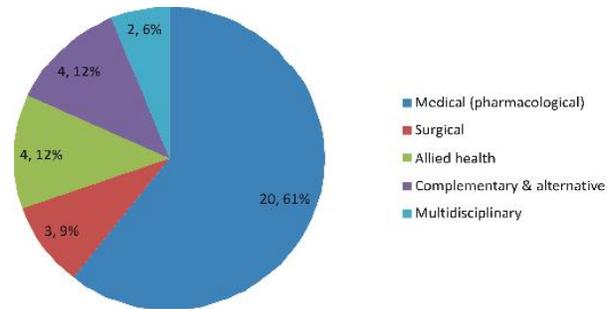


Figure 5: Comparison of Number of Articles between Goals of Study

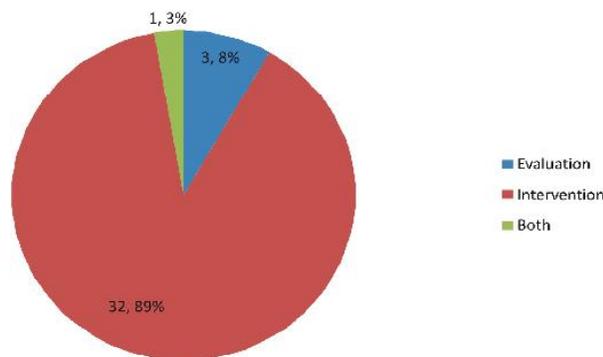


Figure 8: Comparison of Number of Articles Between study Population

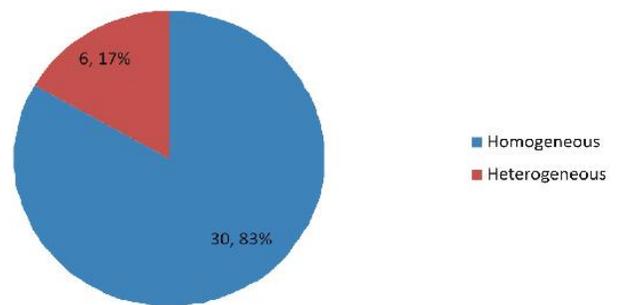


Figure 6: Comparison of Number of Articles between Professional Dimensions of Study

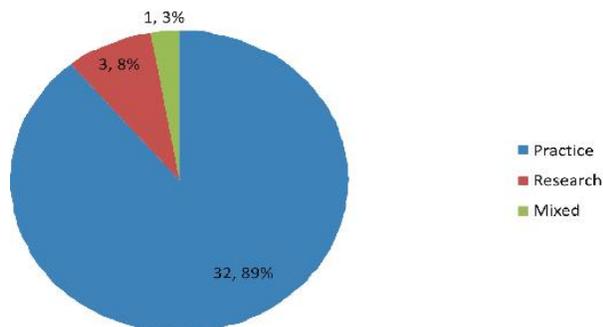
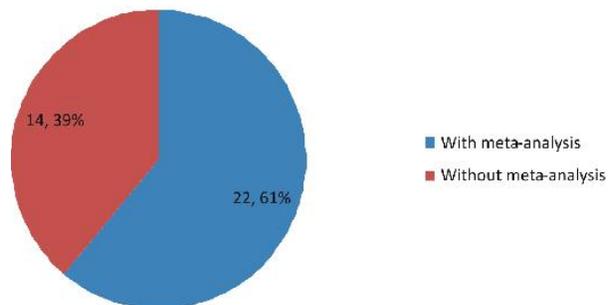
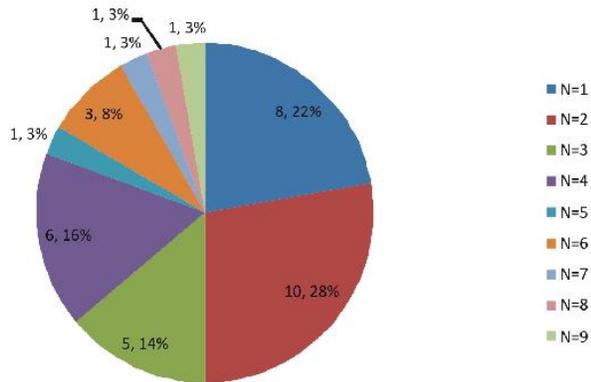


Figure 9: Comparison of Number of Articles between Articles with/without Meta-analysis



13,20,21,24], Germany had two articles[16,22], Hong Kong had one article[40], Italy had two articles[45,46], Netherlands had two articles[17,28], Taiwan had one article[41], UK had seven articles[18,27,31,33,37,42,43], and USA had 13

Figure-10: Comparison of Number of Articles between Number of Searched Databases



articles[14,15,19,23,25,30,32,34-36,38,39,44] (Figure 4).

Goal of Study

32 studies had intervention[11-17,19-28,30,31,33-46] had their goal, and 3 were on evaluation[18,29,32], with only one study on both[39] (Figure 5).

Professional Dimension of Study

32 studies were on practice[11,12,14,15,17-21,23-38,40-46], 3 studies were on research[13,16,22] and one was on mixed[39] (Figure 6).

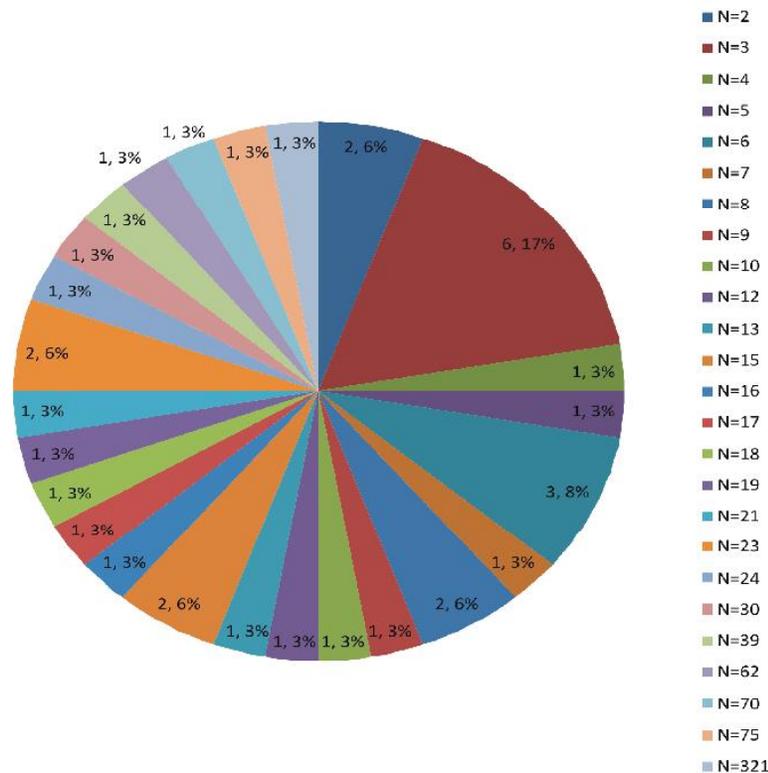
Type of Intervention

Of the 33 studies on intervention, 20 were on medical[12,14,16,17,22,23,25,27,28,33-37,42-46], 4 each on allied health[19,24,26,31] and complementary [11,13,20,21], 3 on surgical treatment [15,30,38] and 2 on multidisciplinary intervention[39,40] (Figure 7).

Type of Population

30 studies were homogeneous[11-15,17-21,24-33,35,36,38-41,43-46] and 6 were heterogeneous[16,22,23,34,37,42] (Figure 8).

Figure 11: Comparison of Number of Articles between Numbers of Included Studies in each Review



Presence/ Absence of Meta-analysis:

22 studies had meta-analysis[11,12,14-17,22,24,25,27,29,32-34,36,37,40,42-46] and 14 studies did not[13,18,19,20,21,23,26,28,30,31,35,38,39,41] (Figure 9).

Number of Databases Searched

The studies included search strategies that comprised of searching 1 to 9 databases, with articles utilizing search strategy using 1 database[15,25,26,32,35,39,43,44], 2 databases[17,23,28,29,30,31,34,36,45,46], 3 databases[14,24,33,37,41], 4 databases [12,16,18,19,40,42], 5 databases[22], 6 databases[11,27,38], seven databases[20], eight databases[13] and nine databases[21] (Figure 10).

Number of Included Studies

There was a huge range of 2[30,35] to 321[39] studies included in the reviews, with a greatest number of 6 studies [18,24,25,34,36,46] that included 3 trials each (Figure 11).

Discussion

This study aimed to provide an explorative overview of systematic reviews and meta-analyses on DPN and it found that limited number of reviews existed, which were published from developed countries, in many scientific journals across the past 15 years, with lesser number of authors, with search strategy that utilized limited number of databases, included few studies, and they were predominantly on medical interventions.

Overall limited number of systematic reviews warrants training and skill

development for researchers on search strategy and appraisal and meta-analysis software and techniques in order to improve conduct and reporting by authors and changes in publication policies by editors.[47]

The emerging role of China in its third leading position in number of systematic reviews on DPN is a positive trend for a developing country which indicated accessibility to original research through online subscription to scientific databases.[48]

Medical interventions for DPN are the mainstay in management of patients be it aetiopathogenetic, symptomatic or palliative.[49-51] There is scope for systematic reviews on surgical[52], physiotherapeutic[53] and neurodynamic interventions[54] in the future. The larger number of systematic reviews on medical interventions may be due to presence of many RCTs[55] and funding opportunities for industry-sponsored clinical trials from drug developers and companies.[56]

Few acceptable limitations of this study were inclusion of PubMed database for search since it was the widely accessed comprehensive biomedical evidence resource[57]; and use of search filter option instead of subject category of systematic reviews for finding the articles which was due to relatively recent introduction of the latter option in PubMed.[58]

There is need for future analyses of randomized controlled trials to further explore the underlying evidence information so that a more appropriate extrapolation could be made to suit specific patient types of foot and ankle dysfunction in DPN.

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Critical Care Journals: From Providing Care in Intensive Units to Ensuring Care for Publishing Evidence

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Abstract

This review article was primarily intended to update the evidence on analyses of critical care journals through a search of PubMed database. There were 11 studies analyzing critical care journals in aspects of journals' prices, editorial board composition, impact factor, national representation, national productivity, international representation, European contribution, Chinese contribution, and equal-credit authorship, survey reporting, and referencing accuracy. There is need for recent studies on analyzing methodological issues, ethical issues and conflicts of interest policies in critical care journals.

Keywords: Critical care; Intensive care; Journal trend; Publication policies; Anesthesiology research.

This review article was primarily intended to update the evidence on analyses of critical care journals through a search of PubMed database.

Price Development

Boldt *et al* analyzed the development in prices of anesthesia/critical care

journals (Anesthesiology, Emergency Medicine & Critical Care, Surgery, Medicine (General), and Cardiac & Cardiovascular Systems) and compared them to prices of other disciplinary journals. There was an increase in prices in the range of 13% to 199%. The mean price increase was higher for Critical care than Anesthesiology, and the journals' size (number of articles or pages) was not found to increase proportionally with the increase in prices.[1]

Composition of the Editorial/Advisory Boards

Boldt and Maleck analyzed 18 Anesthesiology and 16 Emergency Medicine & Critical Care journals about the editorship and the membership of advisory boards. There were 140 editors and 423 advisory board members in the Anesthesiology section, and they were from 14 and 30 countries respectively whereas there were 159 editors and 835 advisory board members in the Emergency Medicine &

Critical Care section, and most of them were from USA.[2]

Impact Factor

Boldt *et al* analyzed the impact factors (IFs) of Anesthesiology and Emergency Medicine & Critical Care journals and most IFs constantly increased over the years, with EM&CC having better increase in trend. More Anesthesiology and Emergency Medicine & Critical Care journals were from the USA and they showed an IF >2.0 over the past 10 years compared to those of European journals.[3]

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National Representation

Boldt *et al* studied the national origin of articles published in 17 Anesthesiology and 13 Emergency Medicine & Critical Care journals for the country of origin of the first author. Among the 10,643 articles in 30 journals, 4,283 articles were from USA, 1418 articles were from UK. In 14 of the 17 US journals, >50% of the publications came from the US. The impact factor per million inhabitants ratio was higher for the small highly industrialized nations (Finland and Sweden) than large highly industrialized countries (USA, Germany and Japan). The United States was found to be the most active nation in this medical area, followed by the United Kingdom.[4]

National Productivity

Li *et al* examined the national productivity of 17,667 articles published in 20 highly cited journals. The productivity was more from North America, West Europe, and East Asia; with high-income countries publishing 89.68% of the total articles. The United States published the most number of articles followed by United Kingdom, Germany, France, and Australia. Besides, the United States also had the most number of randomized, controlled trials, the highest total impact factors, and the highest total citations. Articles published per million population size revealed that Australia had the highest number of articles, followed by Netherlands, Switzerland, Austria, and Belgium.[5]

International Contribution

Shahla *et al* assessed the publications per million inhabitants of major countries by examining the published papers in five major respiratory and intensive care journals (Intensive Care Medicine, Critical Care Medicine, Chest, The American Review of Respiratory Disease,

and Circulatory Shock). USA and Canada were found to be the predominant contributors followed by the other countries in the following order: Switzerland, Sweden, Belgium, the Netherlands, Finland, Austria, Denmark, UK, France, Spain, Italy, Norway, Japan and Germany.[6]

European Contribution

Shahla *et al* assessed the European contribution to the intensive care medicine literature by reviewing all original articles and case reports in 5 major journals (Critical Care Medicine, Intensive Care Medicine, Chest, The American Review of Respiratory Disease and Circulatory Shock). Journal-specific differences were noted and an overall decline in the US contributions and a corresponding increase in the European participations to Chest and the American Review of Respiratory Disease was found, but not to Critical Care Medicine or Circulatory Shock. There was a progressive increase in the French, Italian and Spanish contributions among the European articles.[7]

Chinese Contribution

Li *et al* examined the Chinese contribution in 932 articles published in 18 critical care journals from three major regions of China—Mainland (ML), Hong Kong (HK), and Taiwan (TW). TW had greater number of articles and with impact factors than ML and HK, and their numbers increased from 1999 to 2008. HK had the highest average citations per article, followed by TW and ML. The most popular journal was Journal of Trauma.[8]

Equal-credit Authorship

Wang *et al* investigated the prevalence and characteristics of equal-credit authorship in publications in four major journals of critical care medicine

(American Journal of Respiratory and Critical Care Medicine, Critical Care Medicine, Intensive Care Medicine, and Critical Care). All four journals had 'equal-author' articles, with an increasing trend over the years. The first two authors received equal credit in most articles, and none of the four journals provided specific guidance regarding this practice in their instructions to authors.[9]

Reporting of Surveys

Duffett *et al* analyzed the quality of reporting of 151 surveys published in five critical care journals (American Journal of Respiratory and Critical Care Medicine, Critical Care, Critical Care Medicine, Intensive Care Medicine, and Pediatric Critical Care Medicine).[10]

The journals published at a rate of 0.38 per 1000 citations per year and the median number of respondents and reported response rates were 217 and 63.3%, respectively. United States and Canada were commonly surveyed, and they frequently examined practice (78.8%), attitudes or opinions (60.3%), and less frequently knowledge (9.9%). The commonly reported survey design and methods were: 1) instrument development, instrument testing and clinimetric properties.

Referencing Accuracy

Oermann and Ziolkowski evaluated the number and types of errors in references in 3 critical care nursing journals (Journal of PeriAnesthesia Nursing, American Journal of Critical Care, and Critical Care Nurse). The authors examined 244 references and found 56 errors at an overall error rate of 22.9%. 19.6% had major errors (misspelled or omitted author names and initials) and 45% were minor errors (non-first page discrepancies). Errors in author names combined with incorrect or missing

volume or issue numbers were the 2 most common errors, accounting for 61% of errors.[11]

There were 11 studies analyzing critical care journals in aspects of journals' prices, editorial board composition, impact factor, national representation, national productivity, international representation, European contribution, Chinese contribution, and equal-credit authorship, survey reporting, and referencing accuracy. There is need for recent studies on analyzing methodological issues, ethical issues and conflicts of interest policies in critical care journals.

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Anesthetic Management of a Case of Unilateral Adrenal Mass in Young Female for Adrenalectomy

Heena Parikh*, Malini Mehta**

Abstract

Pheochromocytoma, tumours originating from chromaffin tissue and typically occurs in patients of 30-50 years of age, commonly present with symptoms and signs of catecholamine excess. A 22 year old female patient presented with right sided flank pain, palpitation and occasional giddiness scheduled for right adrenalectomy. Diagnosis was confirmed by CT scan abdomen and post operatively by histopathological examination.

Preoperatively patient's blood pressure was normal. Here we discuss her intraoperative management and post operative course in anaesthesia room as well as in surgical ICU, especially pulmonary oedema that occurred within 2 hours after resection. (Half life of cortisol is 80-110 minutes.)

The anaesthetic technique used was combined general and regional anaesthesia with control of blood pressure during operation and manipulation of tumor with nitroglycerine infusion. Post-operative concerns included acute adrenal insufficiency and pulmonary oedema which were successfully managed in anaesthesia room and surgical ICU. Epidural analgesia was used for post-operative pain relief.

One month later she was reassessed and was symptom free.

Keywords: Pheochromocytoma (adrenalectomy); Hypertension; Anaesthetic management; Pulmonary oedema.

Introduction

Pheochromocytoma is characterized by catecholamine secreting tumor that originates in adrenal medulla or in chromaffin tissue along the para vertebral sumpathetic chain extending from pelvis to the base of skull.[1] Typically present in 30-50 years of age group. Tumour had been recognized earlier by Von Frankel and the name 'dusky coloured tumour' was first used by Pick in 1912.[2,3] Successful surgery for excision of pheochromocytoma was first performed by Roux(1926) and Mayo(1927).[4]

More than 95% of Pheochromocytoma are

found in abdominal cavity and about 90 % originates in adrenal medulla.[5] Approximately 15% of Pheochromocytoma are malignant, 18% extra-adrenal and 20% familial.[6] Clinically inapparent adrenal mass may be detected incidentally as part of Multiple endocrine neoplasia or during unrelated surgery.[7,8] Surgical excision is currently recommended for adrenal mass >5 cm as well as for all types of functioning tumours.

Case Report

A 22 year female patient named sangita ben weighing 35 kg was scheduled for adrenalectomy. She had right sided flank pain, palpitation and occasional

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giddiness for last 2 months. She had undergone for tuberculous cervical lymphnode excision under local anaesthesia 5 years back. Patient had no history of headache, nausea and vomiting.

Preoperatively when patient came for preanaesthetic fitness, she had pulse 100/min and BP 160/110 mm of Hg. After 10 min of rest BP was 150/100 mm of Hg. In systemic examination RS, CVS, CNS revealed no clinically detectable abnormality.

Investigation profile of this patient was Hb-11.7 gm%, PCV-36.8%, Random blood Sugar-96 mg%, Total bilirubin-0.3 mg%, ALT-25 IU/L, Urinary VMA - 1.38 mg/day (normal up to 15 mg/day), USG abdomen shows isodense rounded lesion of 45×35 mm seen at upper pole right kidney with calcification, possibility of right adrenal mass. CT abdomen-right adrenal mass suggestive of pheochromocytoma.

Patient was scheduled for surgery under ASA (American society of anaesthesiologists) class-3 anaesthesia risk and informed consent was obtained for the same. T. Alprazolam (0.5 mg) P.O. was given at night before operation.

On the day of surgery in preanaesthesia room BPL -Accura multipara monitor was attached. Pulse 112/min, BP 150/90 mm of Hg, SpO₂ 99% with room air, Respiratory Rate 14/min and temperature was normal. After securing intravenous cannula, DNS and RL infusion was started.

Patient was premedicated with Glycopyrrolate (0.2 mg), Midazolam (1 mg), Fentanyl (100 µg), Ondansatrom (4 mg) and Ranitidine (50 mg) intravenously.

Following drugs were arranged to combat any crisis intraoperatively.

- Sodium nitroprusside
- Nor adrenaline
- Nitroglycerine

- Dopamine
- Metoprolol
- Dobutamine

After 100% preoxygenation (8 Lt/min) for 5 min. Patient was induced with propofol 1% 100 mg intravenous and trachea was intubated with 7.00 mm I.D. cuffed endotracheal tube after achieving adequate relaxation with vecuronium bromide 3.5 mg. After intubation and before surgery CVP was inserted. After intubation heart rate increased upto 140/min and BP upto 160/110 mm of Hg.

Maintenance of anaesthesia was done by positive pressure ventilation with O₂ and N₂O as 50%-50% with sevoflurane (MAC 3 to 4 %) and inj. Vecuronium 1 mg IV and inj. Propofol 4-6mg/kg/hr through infusion pump (SP 102 L&T). Intraoperatively non invasive BP, Pulse, SpO₂, ECG, EtCO₂, CVP and Urine output were monitored.

Intraoperatively during handling and manipulation of mass, BP was raised up to 196/130 mm of Hg which was treated with inj. NTG 25 mg drip in 500ml of isotonic saline with the rate of 20 µdrops /min. After ligation of adrenal vein there was sudden fall in blood pressure to 70/50 mm of Hg and immediately inj. NTG and sevoflurane was stopped. HAES (hydroxyl ethyl starch) IV started and rate of RL was increased. BP rose up to 90/70 mm of Hg after 10 min.

Intraoperative fluid management included

Inj. DNS 500 ml IV

Inj. RL 2500 ml IV

Inj. HAES (hydroxyl ethyl starch) 250 ml IV

Inj. 25% dextrose 20cc IV

Urine output-650 ml throughout surgery.

Epidural catheter was inserted at L3-L4 intervertebral space under aseptic precautions. Patient was reversed with

inj.glycopyrrolate 0.01 mg/kg and inj. Neostigmine 0.05 mg/kg IV after adequate reflexes. The trachea was extubated after full recovery of consciousness and spontaneous breathing.

Patient was conscious, oriented and fully responded to verbal commands and shifted to recovery room with Pulse 100/min, BP 100/70 mm of Hg, SpO₂-98% without O₂. Patient shifted to postanaesthesia room. Duration of surgery was 3 hrs.

Inj. Tramadol 75 mg (1.5ml) + Inj.NS 6.5 ml-Total volume of 8 ml supplemented through epidural catheter as a postoperative analgesia, when patient complained of pain (after 1 hr of surgery)

Patient kept on O₂ ventimask with O₂ 4 Lt/min in postanaesthesia room. 2 hours postoperatively patient became tachypnoic, restless, desaturated, had tachycardia and bilateral crepitations. SpO₂ was 50% with O₂ (4 Lt/min) through venti mask and CVP-30 cm of water.

Patient was reintubated after sedation with IV 1 mg inj. Midazolam in postanaesthesia room, pinkish froth appeared in endotracheal tube. ABG showed respiratory and metabolic alkalosis. Patient was diagnosed as pulmonary ordema and treated with Inj. Furosemide 1 mg/kg IV and put on ventilator with SIMV mode with PSV + PEEP

Ventilatory Settings

Vt-500ml

RR-14min

FiO₂-100%

PEEP-8 cm of water

Inj. Dopamine 10 µg/kg/min IV infusion

Inj. Dexamethasone 8 mg IV

Inj. Hydrocortisone 200 mg IV

Inj. Deriphylline 2ml IV and IV antibiotics

Initially overnight FiO₂ was 100%, every 4 hourly arterial blood gas estimation showed improved PaO₂ and PaCO₂. FiO₂ decreased to 60% and on next morning patient put on T-piece and was extubated in afternoon.

Patient was fully conscious, with pulse 116/min and BP 110/70 mm of Hg with Inj.Dopamine 10 µg/kg/min IV infusion and SpO₂ 98% with O₂ 4 Lt/min through ventimask.

Rate of infusion of inj. Dopamine drip was adjusted according to blood pressure.

Inj. Hydrocortisone 100 mg IV 8 hourly and inj. Dexamethasone 8 mg IV 12 hourly were tapered gradually and stopped after 3 days.

Patient kept in surgical ICU for 2 days and shifted to surgery ward for 8 days.

On 10th postoperative day, patient was discharged from surgical ward.

Histopathological examination confirmed the mass to be benign adrenal pheochromocytoma.

Discussion

A substantial proportion of pheochromocytoma secretes predominantly norepinephrine, sometimes paroxysmal but usually and often in huge quantities. Sustained severe hypertension is often the commonest presentation of pheochromocytoma[5], there is also vasoconstriction in arterial and venous sites due to released norepinephrine and there by decreasing the circulating blood volume.

Diagnosis can be a problem in pheochromocytoma since it has a great numbers of variations in clinical findings and biological activities. Paroxysmal hypertension is not a specific finding and not present generally. Diagnosis is

usually confirmed by raised urinary catecholamines and VMA in 24 hrs urine, localization of tumour is accurately done by CT scan, MRI, MIBG scan.[6]

Main aim is resolution of symptoms in the preoperative period, so that wide variation in arterial blood pressure does not take place during operation. This is achieved by anti adrenergic drugs i.e. alpha(α) and beta (β) blockers, but in our case this drugs are not required as patient was normotensive preoperatively.

Our goals of anaesthetic management should be to suppress haemodynamic responses during laryngoscopy and intubation and catecholamine release during handling of adrenal mass.

Premedication should be according to choice of anaesthesiologists but drug causing histamine release should be avoided. We used benzodiazepines to reduce anxiety induced activation of sympathetic nervous system. According to Hull's, a rational anaesthetic technique should be based on sound pharmacological principles rather than an 'idiosyncratic fondness for particular drugs or methods'. We differ from Hull only in preferring a combined general and regional anaesthetic technique.[1]

In our case we used propofol 1% as induction agent and fentanyl, a potent short acting opioid as analgesic and of them to attenuate the haemodynamic effect of laryngoscopy and intubation.

Vecuronium was used for intubation instead of suxamethonium because latter may causes histamine release and compression of abdominal tumour during fasciculation.[9] Vecuronium was used due to its cardiovascular stability and inability to release histamine.

Sevoflurane reduces mean arterial pressure by peripheral vasodilatation and decreases sympathetic nervous system activity[10]. Sevoflurane depresses sympathetic neurotransmission in omental vessels by reducing neuronal

norepinephrine (NE) release and NE sensitivity in arteries and by releasing NE release in veins.[11] It relaxes vascular smooth muscles in the presence of the sympathetic neurotransmitter norepinephrine in the mesenteric artery of rabbit and rat.[12] The low solubility of sevoflurane in blood and fat indicate that it is an anaesthetic agent with which anaesthetic level may be rapidly altered and controlled.[13,14]

Nitroglycerine infusion was used to control the blood pressure during handling of tumour.[1] After removal of tumour blood pressure was maintained with crystalloids and colloids.

Post operatively in a patient of pheochromocytoma, cardiogenic and non cardiogenic pulmonary oedema may be present.[15] Cardiogenic pulmonary oedema resulted from pheochromocytoma is a well known phenomena. This finding develops as consequence of late diastolic pressure increase of the left ventricle due to paroxysmal elevations in arterial blood pressure. The same finding may also be caused by myocarditis due to the high levels of catecholamines. Echocardiographic findings in cardiopathy caused by the elevated levels of catecholamines include either dilated or hypertrophic cardiomyopathy sometimes obstructive type findings.[16]

Non cardiogenic pulmonary oedema is very rare. The mechanism of the development of non cardiogenic pulmonary oedema in pheochromocytoma cases is not clearly understood yet. An immediate beginning without cardiac dysfunction findings implicates a pathogenesis alike neurogenic pulmonary oedema. Theoretical mechanism explaining the appearance of neurogenic pulmonary oedema is a formation of immediate and transient vasoconstriction resulted from intensive α -adrenergic stimulation due to sympathetic activity. As this condition affects the extravascular fluid clearance

and causes to:

- (a) Shift of blood from the systemic circulation to lung circulation
- (b) vasoconstriction in the lung
- (c) Lymphatic obstruction

These factors result in edema due to the increase in hydrostatic pressure. Additionally, pulmonary hypertension may lead to capillary permeability alterations and pulmonary haemorrhage. Neurogenic pulmonary oedema may be prevented by early treatment with adrenergic blockers.

Conclusion

Proper diagnosis and management is required. When the patient's condition is identified and treated pharmacologically to control responses to catecholamine release, management of anaesthesia can be highly stressful for the inexperienced anaesthetist. So early involvement of anaesthesiologists is essential along with proper monitoring, adequate fluid replacement and also availability of drugs which can alter blood pressure. Finally, advent of laparoscopic and robotic adrenal-sparing adrenalectomy have resulted in reduced hospital stay, earlier oral intake and resumption of normal activity. Patients with pheochromocytoma ideally be managed by an experienced team of anaesthetists, endocrinologists and endocrine surgeons.

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Anesthesiology Journals and their Scientific Contribution: An Overview of Published Studies

Kumar Senthil P.*, Adhikari Prabha**, Jeganathan***

Abstract

The objective of this short communication was to reiterate the role of anesthesiology journals in informed decision making by summarizing studies on analyses of those journals found in PubMed database. There were five studies analyzing anesthesiology journals, three on authorship and two on randomized controlled trials. Whilst the two authorship studies reported increase in Chinese contribution, one authorship study reported decline in American contribution. The two studies on RCTs had emphasized improved quality of reporting which is needed in anesthesiology journals.

Keywords: Evidence analysis; Journal analysis; Evidence-based anesthesiology; Publication policies.

The objective of this short communication was to reiterate the role of anesthesiology journals in informed decision making by summarizing studies on analyses of those journals found in PubMed database.

Country-specific Contribution

Two studies by Li *et al*[1] and Li *et al*[2] analyzed 17 journals for articles from East Asia (Japan, China, and South Korea) and found 3076 research articles. China and Korea had moderate increase in number of articles while Japan had decreasing trend. China had more citation index for its articles and Anesthesia & Analgesia published more articles from this region.

Szokol *et al* reviewed three leading anesthesia journals (Pain, Anesthesiology, and Anesthesia & Analgesia) for American contribution in authorship. The proportion of American publications was found to be decreasing over the period 1980-2000. Multiple factors such as American publication in journals other than these journals, and the increased quality of submissions from other countries might have influenced these

findings.[3]

Quality of Randomized Controlled Trials

Greenfield *et al* reviewed four anesthesiology journals (Anesthesiology, Anesthesia & Analgesia, Anaesthesia, and Canadian Journal of Anaesthesia) and performed quality evaluation of RCTs using a validated assessment tool, and overall quality score was found as 44%. Quality scores were higher for appropriate controls and discussions of side effects and were lower for randomization blinding, blinding observers to results, and post-beta estimates. 32%

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of RCTs did not report important pretreatment clinical predictors.[4]

Greenfield *et al* reviewed four anesthesiology journals (Anesthesiology, Anesthesia & Analgesia, Anaesthesia, and Canadian Journal of Anesthesia) and found 200 randomized controlled trials (RCTs) out of 2164 articles published in 2006. The Quality scores were found to be improved from the year 2000 to 2006, with improvements in reporting of sample size estimates, major end-points, and discussion of side effects. Suboptimal reporting was evident for randomization blinding, observer blinding to continuing studies, and post-beta estimates in trials with negative outcomes.[5]

There were five studies analyzing anesthesiology journals, three on authorship and two on randomized controlled trials. Whilst the two authorship studies reported increase in Chinese contribution, one authorship study reported decline in American contribution. The two studies on RCTs had emphasized improved quality of reporting which is needed in anesthesiology journals.

The retrieved studies inherently involve two types of bias, firstly- author-specific; the authors of first two studies are the same (both the studies appear identical), so are those of the last two (one is an update of the other). Secondly, journal-specific bias was also found; of

the five articles found, four were published in Anesthesia and Analgesia, and only one article was from Journal of Anesthesia.

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This century will be the century of the brain. Intelligence will define success of individuals; it remains the main ingredient of success. Developed and used properly, intelligence of an individual takes him to greater heights. Ask yourself, is your child intelligent! If yes, is he or she utilizing the capacity as well as he can? I believe majority of people, up to 80% may not be using their brain to best potential. Once a substantial part of life has passed, effective use of this human faculty cannot take one very far. So, parents need to know how does their child grow and how he becomes intelligent in due course of time. As the pressure for intelligence increases, the child is asked to perform in different aspects of life equally well. At times, it may be counter-productive. Facts about various facets of intelligence are given here. Other topics like emotional intelligence, delayed development, retardation, vaccines, advice to parents and attitude have also been discussed in a nutshell. The aim of this book is to help the child reach the best intellectual capacity. I think if the book turns even one individual into a user of his best intelligence potential, it is a success.

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This book has been addressed to young doctors who take care of children, such as postgraduate students, junior doctors working in various capacities in Pediatrics and private practitioners. Standard Pediatric practices as well as diseases have been described in a nutshell. List of causes, differential diagnosis and tips for examination have been given to help examination-going students revise it quickly. Parent guidance techniques, vaccination and food have been included for private practitioners and family physicians that see a large child population in our country. Parents can have some understanding of how the doctors will try to manage a particular condition in a child systematically. A list of commonly used pediatric drugs and dosage is also given. Some views on controversies in Pediatrics have also been included. Few important techniques have been described which include procedures like endotracheal intubations, collecting blood samples and ventilation. I hope this book helps young doctors serve children better.

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HELP THESE INDIAN CHILDREN TO BUILD THEIR OWN FUTURE!

Over 250 children in Belsar village in India, in the backwards rural District of Gonda in Uttar Pradesh (see map) will be without a school building by the end of this school year... unless we help them to pay for building materials for a new school building. Parents who are masons, carpenters and others are c and construct the building. World Without Obstacles – a registered NGO enabled this initiative.

For many years WWO already works together with a small primary school called Gurukul Children Academy. The school is financially independent from the NGO in its day-to-day operations. WWO helps to increase quality of education and health of children and their families. We already designed a future vision together with an architect and the school Principal. During school hours the new building will be used to educate 300 children and after hours WWO will give health info-sessions and vocational skill trainings to adults from the village. The multi-functional building will also be used as a regional office and accommodation for volunteers of the NGO. This will allow WWO to reach out to even more people in Belsar and Gonda District.

In total we need about INR 52 lakh to realise the complete multi-functional school building with 10 class rooms. One class room on average costs around INR 4 lakh. Phase 1 was partly financed via a global online crowd funding campaign. To allow the children continuity of education in the next school year we need to complete construction

