

INFECTION CONTROL

HOSPITAL EPIDEMIOLOGY



Volume 9, Number 9 • September 1988

EDITORIAL

Pseudomeningitis—Another Nosocomial Headache

Burke A. Cunha, MD

ORIGINAL ARTICLES

Bacillus Species Pseudomeningitis

Ludwig A. Lettau, MD, MPH; Dean Benjamin, MT;
H. Furman Cantrell, PhD; David W. Potts, MD; J. Michael Boggs, RN, BSN

An Epidemic of Adenovirus 7a Infection in a Neonatal Nursery: Course, Morbidity, and Management

Adam Finn, BM, MRCP(UK); Endla Anday, MD; George H. Talbot, MD

Nosocomial Infection in Adult Patients with Sickle Cell Anemia

Helen M. Crowe, MD; Deborah A. Lichtenberg, RN; Donald E. Craven, MD

Safe and Cost-Effective Cleaning of Pressure-Monitoring Transducers

Richard Platt, MD; John L. Lehr, PhD; Susan Marino, BS;
Alvaro Munoz, PhD; Barbara Nash, BS; Daniel B. Raemer, PhD

CEU/CME Quarterly Quiz in this issue

The Official Journal of The Society of Hospital Epidemiologists of America

INFECTION CONTROL

AND HOSPITAL EPIDEMIOLOGY

EDITORIAL

- Pseudomeningitis—Another Nosocomial Headache**
Burke A. Cunha, MD

391

ORIGINAL ARTICLES

- Bacillus Species Pseudomeningitis**
Ludwig A. Lettau, MD, MPH; Dean Benjamin, MT; H. Furman Cantrell, PhD;
David W. Potts, MD; J. Michael Boggs, RN, BSN

394

- An Epidemic of Adenovirus 7a Infection in a Neonatal Nursery: Course, Morbidity, and Management**

398

Adam Finn, BM, MRCP(UK); Endla Anday, MD; George H. Talbot, MD

- Nosocomial Infection in Adult Patients with Sickle Cell Anemia**

405

Helen M. Crowe, MD; Deborah A. Lichtenberg, RN; Donald E. Craven, MD

409

- Safe and Cost-Effective Cleaning of Pressure-Monitoring Transducers**

Richard Platt, MD; John L. Lehr, PhD; Susan Marino, BS; Alvaro Munoz, PhD;
Barbara Nash, BS; Daniel B. Raemer, PhD

SPECIAL SECTIONS

- Clinical Pharmacology of Antibiotics: Do Antibiotic Combinations Prevent the Emergence of Resistant Organisms?**

417

William A. Craig, MD

- Statistics for Hospital Epidemiology: Statistical Analysis of 2 × 2 Tables**

420

Robert F. Woolson, PhD; Louise-Anne McNutt, MS

DEPARTMENTS

- Information for Authors** 390

- SHEA Newsletter**

429

- CEU/CME Quiz** 424

- Calendar of Events**

431

- Classified Marketplace** 427

The ideas and opinions expressed by contributing authors do not necessarily reflect those of the editors or publisher.

Publisher: Infection Control and Hospital Epidemiology (ISSN-0195-9417) is published monthly by SLACK Incorporated, 6900 Grove Road, Thorofare, New Jersey 08086. Telephone: (609) 848-1000.

Copyright 1988: All rights reserved. No part of this publication may be reproduced without written permission from the publisher.

Subscriptions. Requests should be addressed to the publisher (except Japan). In Japan, contact Woodbell Scope Incorporated, Mansui Bldg., 9-18, Kanda Surugadai 2-chome, Chiyoda-ku, Tokyo 101, Japan. Subscription rates in the US and possessions: Individual: One year—\$45.00; Two years—\$75.00; Three years—\$105.00. Institutional: One year—\$60.00; Two years—\$100.00; Three years—\$140.00; Canada: \$15.00 additional each year; all other countries: \$25.00 additional each year. Single copies of current issues may be obtained for \$7.00, United States and possessions; \$13.00 all other countries.

Change of address: Notice should be sent to the publisher six weeks in advance of effective date. Include old and new addresses with zip codes. The publisher cannot accept responsibility for undelivered copies. Second-class postage is paid at Thorofare, New Jersey 08086, and additional entry points. **Postmaster:** Send address changes to SLACK Incorporated, 6900 Grove Road, Thorofare, NJ 08086.

As of Volume 1, Number 1, INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY is listed in *Index Medicus*, *Current Contents—Clinical Practice*, *Hospital Literature Index*, and *Cumulative Index to Nursing and Allied Health Literature*.

INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY

Editorial Offices
C41 General Hospital
University of Iowa Hospitals and Clinics
Iowa City, Iowa 52242
(319) 356-0464

EDITOR

Richard P. Wenzel, MD, MSc

UNIVERSITY OF IOWA EDITORIAL ADVISORY BOARD

William J. Haasler, Jr., PhD
R. Michael Massanari, MD, MS
Michael A. Pfaller, MD
Robert F. Woolson, PhD

MANAGING EDITOR

Marikay Klein

SENIOR ASSOCIATE EDITOR

William Schaffner, MD Nashville, Tennessee

ASSOCIATE EDITORS

Sue Crow, MSN, RN, CIC Shreveport, Louisiana
John E. McGowan, Jr., MD Atlanta, Georgia
Dennis G. Maki, MD Madison, Wisconsin

SECTION EDITORS

Clinical Pharmacology of Antibiotics

William Craig, MD Madison, Wisconsin
Francine R. Salamone, RPh, PharmD New York, New York

Decision Analysis

Mary D. Nettleman, MD Iowa City, Iowa

Legal Issues in Infection Control

William W. Hesson, JD Iowa City, Iowa
Cynthia W. Thu, JD Iowa City, Iowa

Product Commentary

Sue Crow, MSN, RN, CIC Shreveport, Louisiana

SHEA Newsletter

Robert A. Weinstein, MD Chicago, Illinois

Statistics for Hospital Epidemiology

Robert F. Woolson, PhD Iowa City, Iowa
Louise-Anne McNutt, MS Iowa City, Iowa

Topics in Clinical Epidemiology

Walter J. Hierholzer, Jr., MD New Haven, Connecticut
William Credé, MD New Haven, Connecticut

Topics in Clinical Microbiology

Charles W. Stratton, MD Nashville, Tennessee

EDITORIAL ADVISORY BOARD

J. Wesley Alexander, MD Cincinnati, Ohio
Paul Arnow, MD Chicago, Illinois
Elizabeth Ann Bolyard, RN, MPH, CIC Baltimore, Maryland
Charles S. Bryan, MD Columbia, South Carolina
John P. Burke, MD Salt Lake City, Utah
Burke A. Cunha, MD Mineola, New York
Richard E. Dixon, MD, FACP Trenton, New Jersey
Leigh G. Donowitz, MD Charlottesville, Virginia
Harvey A. Elder, MD Loma Linda, California
Bruce Farber, MD Manhasset, New York
Martin S. Favero, PhD Atlanta, Georgia
Peter C. Fuchs, MD, PhD Portland, Oregon
Richard A. Garibaldi, MD Farmington, Connecticut
Angella Goetz, MNEd, RN Pittsburgh, Pennsylvania
Donald A. Goldman, MD Boston, Massachusetts
Dieter H.M. Gröschel, MD Charlottesville, Virginia
Peter A. Gross, MD Hackensack, New Jersey
David K. Henderson, MD Bethesda, Maryland
Peter N.R. Heseltine, MD Los Angeles, California
Allen B. Kaiser, MD Nashville, Tennessee
Elaine Larson, PhD, RN Baltimore, Maryland
Rob Roy MacGregor, MD Philadelphia, Pennsylvania
C. Glen Mayhall, MD Richmond, Virginia
Patti J. Miller, MS Charlottesville, Virginia
Harry C. Nottebart, Jr., JD, MD Richmond, Virginia
Michael T. Osterholm, PhD, MPH Minneapolis, Minnesota
James E. Peacock, Jr., MD Winston-Salem, North Carolina
William A. Rutala, PhD, MPH Chapel Hill, North Carolina
William E. Scheckler, MD Madison, Wisconsin
Walter E. Stamm, MD Seattle, Washington
Richard L. Sweet, MD San Francisco, California
George H. Talbot, MD Philadelphia, Pennsylvania
Timothy R. Townsend, MD Baltimore, Maryland

FOREIGN ADVISORY BOARD

Graham Ayliffe, MD, FRCPATH Birmingham, England
George Berencsi, MD Szeged, Hungary
David Birnbaum, MPH Sidney, British Columbia, Canada
Fraus Daschner, MD Freiburg, Federal Republic of Germany
Professor Włodzimierz B. Kędzia Śląsko, Poland
Professor Alexi P. Krasilnikow Minsk, USSR
Hsieh-Shong Leu, MD, MSc Taipei, Taiwan
Jack Levy, MD Brussels, Belgium
Professor Dr. Walter Margit Munich, Federal Republic of Germany
Malcolm I. McDonald, FRACP, FRCPA Malvern, Australia
Jonathan L. Meakins, MD, DSc, FRCSC, FACS Paris, France
Bertil Nyström, MD Huddinge, Sweden
Ian Phillips, MA, MD, MRCPATH London, England
Juhani Ojajärvi, MD Helsinki, Finland
Samuel Ponce de Leon, MD, MSc Mexico City, Mexico
Hans Reber, MD Basel, Switzerland
Manfred L. Rotter, MD, DipBact Vienna, Austria
Theodore Sacks, MD Jerusalem, Israel
Dr. Bernhard M. Thimm Ulm, Federal Republic of Germany
Professor Dr. med. H.P. Werner Mainz, Federal Republic of Germany
Professor Dr. W. Weuffen Greifswald, German Democratic Republic
Sergio B. Wey, MD São Paulo, Brazil

SLACK

SLACK Incorporated
6900 Grove Road
Thorofare, New Jersey 08086
(609) 848-1000

Publisher
Richard N. Roash
Editorial Director
Donna O. Carpenter
Senior Editor/Development
John C. Carter
Editorial Coordinator
Sandra L. Patterson

Assistant Editors

Cheryl Pokalo
Kathryn Kidd

Production Manager

Martin Rabinowitz

Production Coordinator

Susan Budd

Circulation Manager

Kevin J. Fenton

Group Advertising Sales Manager

Wayne M. McCourt

Advertising Sales Coordinator/
Classified Advertising Representative
Donna M. Coles

Information for Authors

Manuscripts should consist of new material based on infection control activities within a health care facility or in the community, from the US or abroad. All clinical research must have been conducted in accordance with guidelines on the protection of human subjects as established by the US Department of Health and Human Services. Articles are accepted with the understanding that they are contributed solely to INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY and have not been published previously except in abstract form. *Authors will be requested to sign a standard release of copyright form.* The journal will cover the general topics of environmental monitoring, surveillance, prevention, immunization, regulation, education, and research related to infection control.

All manuscripts should be submitted in triplicate (with duplicates of figures and tables), typewritten on one side on 8 1/2 × 11-inch paper, double-spaced with generous margins. The author should keep a complete copy of the manuscript.

The organization of the paper should be as follows: title page; abstract; introduction; methods; results; discussion; acknowledgments; references; tables; figures and figure legends. The main sections and subdivisions should be indicated by side headings flush with the left margin and two lines above the text. The Arabic numbering system should be used.

Clinical Trials: The Editor requests that authors reporting the results of clinical trials describe clearly the following: 1) eligibility criteria; 2) whether or not subjects were admitted before allocation to one of the study groups; 3) the method of randomization; 4) whether the study was "masked," what specific information was masked and whether subjects, clinicians and evaluators were all masked; 5) the method used to identify treatment complications; 6) an explanation and analysis of subjects lost to follow-up; 7) statistical methods employed; 8) information which led to the determination of the size of the study groups and the expected differences between groups; and 9) indicate that studies involving human subjects have been reviewed and approved by their institutional review board.

Rapid Publication: A request for rapid publication must be stated in the cover letter and manuscripts should not exceed ten double-spaced, typewritten pages. The editor will send the manuscript for rapid review only if the information contained is a unique, scholarly contribution of special importance. Such papers will be published within *three to four months* of acceptance. No comments will accompany rejected papers, but manuscripts may be resubmitted under the normal publication procedures.

Readers' Forum: Brief communications are encouraged of approximately four to six typewritten pages containing information which does not represent a formal study. They may reflect opinions, hypotheses, or impressions related to infection control or summarize unusual experiences in the field.

Title Page: A separate title page should include the following: title of manuscript; author(s); laboratory or institution of origin with city and state; acknowledgment of grant support; address to be used for reprint requests. An abbreviated title, to be used as a running head, should be included. This should not exceed four words. A preliminary report or abstract should be credited by use of a footnote to the title.

Abstract: The abstract, not to exceed 150 words, should summarize the significant information in the paper and be understandable without reference to the text. The use of abbreviations should be avoided.

Tables: Tables should be double-spaced, each on a separate page, and self-contained. Do not use vertical lines or ditto marks. The table number should be typed flush left, with the table title beneath it. Symbols for footnotes are listed below. Abbreviations used in a table should be explained at the bottom of the table after the footnotes.

Figures: Two sets of unmounted glossy prints should be enclosed in separate envelopes. Indicate lightly on the back margin of each figure the number, name of author, and top. Illustration costs in excess of \$50 must be defrayed by the author.

Photographs: Two copies of each photograph should be submitted. Any identifiable human subject must sign a release form before the photograph can be used. Radiographs and other black-and-white material should be submitted as unmounted glossy print, 5" × 7" size preferred. A separate identification label should be pasted on each print; do not write directly on the print or use paper clips or staples. Photomicrographs or other color materials should be submitted as color transparencies. Actual magnification and staining method should be given where appropriate; electron photomicrographs should have internal scale markers.

Legends: Legends should be double-spaced, each on a separate page.

References: References should be double-spaced, and should be cited consecutively in the text with superscript numbers outside punctuation. A reference to a paper "in press" may be included. Citations such as "in preparation," "submitted for publication," "unpublished data," and "personal communication" should be given in parentheses in the text only. At the end of each article, references should be listed in the numerical order in which they appear in the text. No more than three authors should be listed for each citation; authors after the third should be designated "et al." Abbreviations of the names of the journals should conform to the Index Medicus. Journal titles should be cited as they existed at the time of publication. Unlisted journals should not be abbreviated. Authors are responsible for bibliographic accuracy.

Articles: Annunziato D, Goldblum LM: Staphylococcal scalded skin syndrome: A complication of circumcision. *Am J Dis Child* 1978; 132:1187-1188.

Books: Hoeprich PD: *Infectious Diseases*, ed 2. New York, Harper & Row Pubs Inc, 1977, p 169.

Contributions to Books: Schaffner W: Psittacosis: Ornithosis, parrot fever, in Beeson PB, McDermott W, Wyngaarden JB (eds): *Cecil Textbook of Medicine*, ed 15. Philadelphia, WB Saunders Co, 1979, pp 336-338.

Footnotes: Footnotes to the text and tables should be as few as possible. Each should be typed at the foot of the appropriate page, separated from the text or table by a horizontal line. Designate footnotes by the following symbols in this order: *, †, ‡, **, ††, ‡‡.

Abbreviations and Nomenclature: Abbreviations should conform to the American Medical Association *Manual for Authors and Editors*, published by Lange Medical Publications, Los Altos, California. Abbreviations should be kept to a minimum, preferably confined to the tables. Symbols for units of measurement (eg, mm, ml) should not be followed by periods. Chemical or generic names of drugs are preferred. A proprietary name may be given only after it is preceded by the chemical name the first time it appears. Unfamiliar terms and abbreviations must be defined when first used.

Reviews: Each manuscript will be reviewed by the Editor and at least one other Editorial Board member. Authors will be notified as soon as possible regarding the acceptability of their manuscripts.

Galley: Galley prints will be sent to the author for approval before the article is printed.

Reprints: The senior author will be sent five complimentary copies of the issue in which the article appears. An order form showing the price for reprints will be sent with the complimentary copies of the issue.

Mail Manuscripts to: Marikay Klein, Managing Editor
INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY Editorial Offices
C41 General Hospital
University of Iowa Hospitals and Clinics
Iowa City, Iowa 52242