NEW PERSPECTIVES ON EVIDENCE-BASED DENTISTRY

Speaker: Ann Eshenaur Spolarich RDH, PhD, Angelo Mariotti DDS, JoAnn Gurenlian RDH, PhD

Course Objectives:
- Student/Intern will grasp the prevalence of periodontal disease and its risk factors in the population and its indications
- Discuss the new classifications and approach to treatment for plaque-induced gingivitis
- Recognize systemic conditions which affect the incidence of gingivitis
- List the treatment considerations for plaque-induced gingivitis, including microbial assessment, re-evaluation and recare intervals
- Recognize the implications, evaluation and treatment of disease occurring around dental implants (peri-implant disease)
- Discuss accessing credible sources when discerning the effectiveness of a dental product or treatment modality
- Recognize the need for evidence-based patient treatment recommendations

CODA Standards:
- 2-13 Graduates must be competent in providing the dental hygiene process of care which includes:
  a) comprehensive collection of patient data to identify the physical and oral health status;
  b) analysis of assessment findings and use of critical thinking in order to address the patient's dental hygiene treatment needs;
  c) establishment of a dental hygiene care plan that reflects the realistic goals and treatment strategies to facilitate optimal oral health;
  d) provision of patient-centered treatment and evidence-based care in a manner minimizing risk and optimizing oral health;
  e) measurement of the extent to which goals identified in the dental hygiene care plan are achieved;
  f) complete and accurate recording of all documentation relevant to patient care.

- 2-18 Graduates must be competent in the application of the principles of ethical reasoning, ethical decision making and professional responsibility as they pertain to the academic environment, research, patient care and practice management.
- 2-19 Graduates must be competent in applying legal and regulatory concepts to the provision and/or support of oral health care services.
- 2-21 Graduates must be competent in the evaluation of current scientific literature.
Canadian Competency:

- A10. Design and implement services tailored to the unique needs of individuals, families, organizations and communities based on best practices.
- B13. Act as a knowledge source for clients, professionals and the public about oral health and access to oral health care.
- C1. Analyze the strengths and limitations of different research approaches and their contributions to the knowledge base of dental hygiene.
- C3. Differentiate between more and less credible types of information including written statements and other representations of data such as figures and tables.
- C4. Explore complex issues from many points of view recognizing biases and assumptions.
- C5. Apply theoretical frameworks to the analysis of information to support practice decisions.
- C6. Support conclusions based on a variety of resources with sound rationales.
- C7. Apply evidence-based decision making approaches to the analysis of information and current practices.
- C9. Apply the behavioral, biological and oral health sciences to dental hygiene practice decisions.
- C10. Assess the appropriateness of study methods including common descriptive and inferential statistical tests to sets of data.
- C11. Compare and contrast the strength and limitation of studies pertaining to dental hygiene services and public policies regarding health care delivery.
- C12. Critique literature findings to determine their potential value to dental hygiene practice.
- F9. Establish dental hygiene care plans based on clinical data, a client-centered approach and the best available resources.
- H4. Use information systems and reports for collection, retrieval and use of data for decision making.

Additional Faculty Resources:

- Keeping Current: A Commitment to Patient Care Excellence through Evidence Based Practice, Forrest & Overman, JDH, 2013 Special Commemorative Edition
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Classroom Discussion Questions:

1. What is the difference between reading studies which show "statistical significance" of a treatment modality and the "clinical significance" when treatment planning and discussing treatment options with patients.

2. Discuss the aspect of "bias" in research.

3. Investigate how dental companies develop products. What does it take to get a new product to market?

4. List and discuss the steps involved in a New Drug Application to the FDA, including post-market release of a drug/product. What is the significance of Colgate's submission of triclosan to this process?

5. What is the significance of the ADA Seal of Approval and the process for product approval?

6. How might we respond to patients who have seen or read information on common dental products or procedures which indicated they were toxic or unsafe? Examples: fluoride, sealants, amalgam, etc.

7. Discuss implant debridement instruments indicated for use on implants and which are available in the clinic and would be preferable to have in practice.

8. Discuss and explore plaque control implements, chemotherapeutic agents, and strategies for home care of implants.

Classroom Activities for Additional Learning:

1. Periodontal Disease/Implants – Students can utilize texts and online resources to locate photos which represent characteristics which are associated with various classifications of gingivitis

2. Using these photos students can develop clinic resource on recognition of peri-implantitis and periodontics including treatment/referral indications
3. Discuss implant debridement instruments indicated for use on implants and which are available in the clinic and would be preferable to have in practice.

4. Levels of Evidence: Choose a topic which will be easily accessed in the University databases. Have groups of students locate relevant literature on a topic from each of the categories of evidence in the Evidence Based Pyramid.

5. Research on Dental Products: In groups students choose a particular product which might be used for patient care. Discuss how the product might be used. Investigate product claims & published research and evaluate evidence of effectiveness. Colgate Total: Using this product as an example, have students discuss the product claims, the research behind the product and the characteristics of the product. FDA and ADA Approval - how significant is this? Present to class.
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Exam Questions:

1. Research has shown triclosan to have both an antibacterial and anti-inflammatory effect on reducing gingivitis.
   
   A. True
   B. False

   Answer: A
   Rationale:
   Anti-bacterial - Primary site of antibacterial action is bacterial membrane
   Modification of structure and function through disaggregation of cell wall and leakage of cellular contents and inhibition of uptake of essential amino acids into cell
   Anti-inflammatory action - Modulation (inhibition) of inflammatory mediator production and up-regulation of growth factors involved with wound healing

2. What is the purpose of the co-polymer used along with the triclosan?
   
   A. it provides an anti-inflammatory effect
   B. it allows the triclosan to remain in the mouth for a slow release over 12 hours.
   C. it is an antibacterial agent
   D. it clears the triclosan from the oral cavity quickly to reduce toxicity

   Answer: B
   Rationale: provides a velcro like effect on hard and soft tissue for the slow release of the triclosan for 12 hours.

3. What is the Cochrane Review?
   
   A. The research division of Colgate.
   B. An independent organization which reviews clinical trials on products and treatment to evaluate their merit.
   C. A prestigious dental journal which publishes medical and dental research.

   Answer: B
D. A regulatory agency which regulates medical and dental products and devices and evaluate their safety and efficacy.

Answer: B
Rationale: Cochrane Collaboration - International non-profit organization that prepares, maintains, and disseminates systematic up-to-date reviews of health care interventions

4. Is the following statement TRUE or FALSE? Explain your answer.

Once the FDA has approved of a drug through the New Drug Application (NDA) process, no further reporting needs to be done by the company which manufactures and markets it.

Answer: False
PostMarketSurveillance is required for all drugs.
Because of the possibility of unknown side effects, postmarket surveillance continues for the life of a drug. As a condition of FDA approval, the sponsor must report adverse reactions and may be required to complete further clinical studies to evaluate drug performance. Once approved, the sponsor may choose to further investigate the drug to receive approval to market the product for other uses or in various formulations.