ABSTRACTS IN URGENT CARE

- Antibiotics (or Not?) for Dog Bites
- Scaring the Quest for Antibiotics Out of Patients
- Post-Op Antibiotics in Complex Appendicitis
- How Long Should Sepsis Patients Receive Antibiotics?
- Times Are Changing for Patients with Allergic Rhinitis

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Prophylactic Antibiotics for Dog Bites

- **Key point:** The majority of the patients presenting to emergency rooms with dog bites receive prophylactic antibiotics either in the hospital or on discharge. About one quarter of the patients who were given prophylactic antibiotics did not meet the high-risk criteria.
- **Citation:** Baxter M, Denny KJ, Keijzers G. Antibiotic prescribing in patients who presented to the emergency department with dog bites: A descriptive review of current practice. *Emerg Med Australas*. 2020;32(4)578-585.
- **Relevance:** Concerns regarding overuse of antibiotics prompt examination of current practices, such as prophylactic use in dog bites.
- **Study summary:** This was a retrospective descriptive cohort study conducted in Queensland, Australia in two different emergency departments over a 1-year period. All patients who presented to the ED with dog bites during the study period were included.

  A total of 336 patients were included in the study for analysis, out of which 23 had documented infections. Among the patients who were discharged from the ED, the majority (87%) received prophylactic antibiotics even though more than a quarter of them (28%) did not meet high-risk criteria for antibiotics as outlined in existing guidelines.
- **Limitations:** This retrospective study has several limitations. Important information such as high-risk features of dog bites were not available for some patients. It was not clear how the authors addressed the issue in their analysis. The generalizability of the study findings and its applicability to clinical practice may be limited due to the fact that it was conducted in only two centers in Australia. ■

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"Fear-Based" Messaging to Reduce Antibiotics Use

- **Key point:** A public health campaign of fear-based messaging regarding antibiotic resistance among the general public reduced requests for antibiotics for viral illnesses. However, this strategy may work better if the public is empowered with education on the self-management of symptoms.
- **Citation:** Roope LSJ, Tonkin-Crine S, Herd N, et al. Reducing expectations for antibiotics in primary care: a randomised experiment to test the response to fear-based messages about antimicrobial resistance. *BMC Med*. 2020;18(1):110.
- **Relevance:** The general public has varying levels of medical literacy. The study focuses on a strategy that can be utilized to reduce inappropriate requests for antibiotics.
- **Study summary:** This randomized, online 2016 survey in the UK divided 4,000 participating adults into three groups: fear-based message alone (n=1,000); mild fear-based message with empowerment (n=1,500); and severe fear-based message with empowerment (n=1,500). The findings were independently validated with an online survey of another 4,000 UK adults a year later.

  The findings were similar between both sets of survey respondents. The researchers found that 46.9% of adults who received strong fear-based messaging with empowerment for the self-management of symptoms of influenza-like illness said they were "much less likely/less likely" to request antibiotics from their primary care physicians, compared with 34.5% who received mild-fear-plus-empowerment messaging and 29.8% who received fear-alone messaging.
- **Limitations:** The study examined the hypothetical behavior of the general public. Further studies are required to explore the applicability of this strategy in actual patient behavior rather than the hypothetical behavior.

  Generalizability of these findings outside of the UK is also uncertain. ■

Postoperative Antibiotics in Complex Appendicitis

- **Key point:** There is no clear evidence in favor of the optimal duration of antibiotics postoperatively in the complex appendicitis patients.
- **Citation:** van den Boom AL, de Wijkerslooth EM, Wijnhoven BP. Systematic review and meta-analysis of postoperative antibiotics for patients with a complex appendicitis. *Dig Surg*. 2020;37(2):101-110.
- **Relevance:** Patients with complex appendicitis are typically managed with antibiotics. However, there is a paucity of evidence for the optimal duration of the antibiotics use.
- **Study summary:** This is a systematic review and meta-analysis which screened 1,614 studies published before 2018 including randomized controlled trials (RCT), observational studies, and case series, which specifically recorded the duration of antibiotics prescribed postoperatively in complex appendicitis. Complex appendicitis was defined as gangrenous appendicitis or perforation. The primary outcome measure was intra-abdominal abscess (IAA) formation.

  Following a rigorous inclusion and exclusion criteria, nine studies were included for qualitative analysis, reflecting 2,006 patients. A total of four studies were included for quantitative data analysis. The study revealed there was a statistically significant difference in patient outcomes between the duration of ≤5 and >5 days of antibiotic use (risk ratio 0.36 [95% CI 0.23-0.57]; p<0.0001), with intra-abdominal abscesses being more common in ≤5 days group. However, there was no statistically significant differences between the duration of ≤3 and >3 days of antibiotics use (p=0.59).
- **Limitations:** All nine studies included are categorized as "low" or "very low" based on the Grades of Recommendations, Assessment, Development and Evaluation (GRADE) tool which may have reduced the applicability of the study findings to clinical practice. Moreover, the authors of this systematic review are based in the Netherlands where antibiotics >5 days is usually not given; this is likely to have affected their analysis in the article. ■

Is There an Optimal Time to Give Antibiotics in Sepsis?

- **Key point:** There was an association between the time to antibiotic administration and mortality in patients with septic shock. However, there was no association between the time to antibiotics and mortality in patients with sepsis who were not in shock in this study.
- **Citation:** Weinberger J, Rhee C, Klompas M. A critical analysis of the literature on time-to-antibiotics in suspected sepsis. *J Infect Dis*. 2020;21;222(Supp 2):S110-118.
- **Relevance:** The Surviving Sepsis campaign has compelled the administration of antibiotics within an hour of presentation in patients with suspected sepsis. However, the practical application of these guidelines in clinical practice is challenging. Up to 40% of the patients who are admitted to the intensive care unit with an initial diagnosis of sepsis are found to have a low probability of sepsis. The initial aggressive and indiscriminate use of antibiotics in such patients in urgent care centers and EDs may result in more antibiotic-associated complications than are justified if there is no benefit.
- **Study summary:** This is a critical analysis of the contemporary literature examining the optimal timing of antibiotics in sepsis and its association with mortality. Both randomized controlled trials and observational studies were included. The authors found that the contemporary literature supports the early use (<5 hours) of antibiotics in patients with septic shock, which reduces the mortality in such patients. However, there is no evidence to suggest that the early use of antibiotics in the patients without septic shock is beneficial.
- **Limitations:** This is a critical analysis, not a systematic review or meta-analysis. The authors do not discuss the methodological aspects of inclusion criteria and literature search. ■

Changing Trends of Allergens and Allergic Rhinitis

- **Key point:** Rapid changes in both environmental factors and lifestyles over the last 20 years have affected patients suffering allergic rhinitis.
- **Citation:** Kim JH, Kim SA, Ku JY, et al. Comparison of allergens and symptoms in patients with allergic rhinitis between 1990s and 2010s. *Allergy Asthma Clin Immunol*. 2020;16(1):1-7.
- **Relevance:** The effects of environmental and lifestyle factors on allergic rhinitis are well known. These have changed considerably in Korea over the past 20 years. The study may reflect the implications of such changes on disease manifestation of allergic rhinitis.
- **Study summary:** This was an observational study conducted in a tertiary care center in Korea in the 1990s (n= 1,447) and 2010s (n=3,388). The study examined the association between allergens and allergic rhinitis in these two patient groups. Allergic rhinitis was confirmed by the skin prick test in these patients. The study revealed that the rate of sensitization to house dust mites, cockroaches, *Aspergillus*, *Alternaria*, and tree pollen increased significantly (p<0.05). This implies that rapid environmental changes have some implications for the allergic rhinitis patient groups.
- **Limitations:** This was a single-center observational study conducted in Korea. The generalizability of the study findings to other countries is unclear. ■