
2006 Health Sciences SIPs

Clinical SIPs

An Examination of Anastrozole as Endocrine Treatment for Postmenopausal Women with Estrogen-Receptor Positive Breast Cancer (Lindsay Anderson)	1
A Comprehensive Approach to Osteoporosis (Kathy Bickle)	2
Epidemiological Crisis: Reform Needed to Stop the Spread of Antibiotic Resistance	3
Tobacco Use in a Dental Patient Population	4

An Examination of Anastrozole as Endocrine Treatment for Postmenopausal Women with Estrogen-Receptor Positive Breast Cancer

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Hundreds of thousands of women are diagnosed with breast cancer in the United States each year. Endocrine, or hormonal, therapy is a standard treatment for women who have hormone-receptor positive breast cancer and prefer less toxicity than chemotherapy. For the past 30 years, tamoxifen has been the standard endocrine treatment for postmenopausal women with estrogen-receptor positive breast cancer in any setting including first-line, adjuvant, neoadjuvant and prevention of breast cancer. The increased risk of thromboembolic events, cataracts and more seriously, endometrial cancer, caused aromatase inhibitors to be more actively studied as alternative treatment. Studies with the third-generation aromatase inhibitors, which became available for clinical use in the 1990's, indicate aromatase inhibitors are better tolerated and as, or more, effective than tamoxifen. Recent research focuses on testing the efficacy and toxicity of aromatase inhibitors versus tamoxifen. Anastrozole is the most widely studied third-generation aromatase inhibitor and is equally as effective as tamoxifen at preventing disease recurrence and time-to-progression of the disease. Anastrozole is approved for use as first-line, adjuvant and neoadjuvant therapy with ongoing studies to assure its place as a standard endocrine therapy.

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My clinical internship involved rotating through a few different sites in Marquette, Michigan. I interned at U.P. Hematology/Oncology Associates, and then worked at the Walk-In Clinic, the only urgent care clinic in Marquette. I finished my internship at the Radiation/Oncology department at Marquette General Hospital. I was able to see how each of the different offices functioned, from the movement of patients through the office, appointments, follow-ups and insurance issues. In addition, I spent a significant portion of my time shadowing the doctors at each of the practices. I had the opportunity to attend cancer board at Marquette General, where a group of oncologists, surgeons and other doctors from around the U.P. discussed treatment plans for difficult or unusual cases of cancer. This experience caused me to focus on a relatively new treatment option for breast cancer as my SIP topic.

A Comprehensive Approach to Osteoporosis

Kathleen J. Bickle

Dr. Bharat M. Vakharia

Patients can be aware of why and how osteoporosis affects their bodies. They can learn how their bones remodel, supplying their bodies with essential nutrients and then rebuilding after the deficit is met. Next patients can learn what their bodies need to keep their bones healthy and out of a serious state of deficiency. Then they can learn symptoms to be conscious of and risk factors and tests their doctors will use for diagnosis if prevention is no longer an option. Finally, in the cases when therapeutic drugs are needed, it is important to research all the pharmaceutical options available for prevention and treatment.

Epidemiological Crisis: Reform Needed to Stop the Spread of Antibiotic Resistance

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Antibiotic resistance is a growing problem in the United States and around the world resulting in the reemergence of communicable disease as a serious public health crisis. The number of patients infected with resistant strains of bacteria including *Streptococci*, *Staphylococcus aureus*, Enterococci, *Escherichia coli*, and *Salmonella* has steadily increased in recent decades with no signs of stopping (Cassell and Mekalanos, 2001; Buhner, 1999; Shnayerson and Plotkin, 2002). In order to fight the growing number of infections, researchers have turned to synthetic chemistry, plant and fungal remedies, and animal peptides hoping to find new antibiotics that will not succumb to the many resistance mechanisms possessed by the microorganisms. While each field offers possible new treatments, many have proven to be far from perfect solutions. In addition to continuing research into new medicines, many medical, agricultural, and layperson practices need to be reformed in order to discourage the evolution and spread of resistant bacteria. Without continuing advancements in antibiotic research and worldwide elimination of practices that promote the growth of resistant bacteria, the future does not look bright for the health of mankind. It is of utmost importance that funding and research are encouraged and action is taken to keep scientific advancement in the field of antibiotics ahead of the evolution of resistant bacteria.

Tobacco Use in the Dental Patient Population

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A retrospective study was performed to determine the incidence of tobacco usage and cessation in a dental school patient population. The study was conducted to assess the magnitude of the tobacco problem in the dental population, along with determining how successful the cessation efforts are and the determination of patients to quit.

The study reviewed 1,030 randomly selected patients' charts who were seen in the year 2004. Of these, 1,025 met the study criteria, a medical history form with completed tobacco usage questions.

It was found that 55% (565) of patients had used tobacco. Out of these 565 tobacco users, 38% still continue to use tobacco products, including 25 current users who failed in their attempt to quit. Thirty-two percent of the tobacco users were not interested in quitting. Patients ranging from twenty to twenty-nine years of age had the highest prevalence of tobacco non-quitters. It was also found that as age increased there was a steady increase of tobacco cessation. The cessation trend started at 21% in patients twenty to twenty-nine, with a steady increase to 100% prevalence in patients ninety or older. Tobacco usage was also found to be more prevalent in the male population, 63% (295), than in the female population, 49% (271).

Of the total patient population 25% were current smokers, which is well above the national health goal to reduce tobacco usage to 12% by 2010. This is an immediate problem that needs to be addressed. Dental care providers must work to reduce the tobacco percentage by providing cessation information and support.