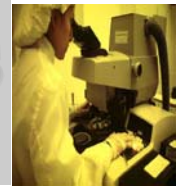


Center for Diagnostic Sciences BULLETIN



June 2004

Issue #6

We are pleased to announce that issue # 6 of the Center for Diagnostic Sciences Bulletin, which focuses on pharmaceuticals with additional information on indications and interactions of importance to dentistry, is ready for distribution to the dental school community. We appreciate Dr. Claire Gill's contributions in preparing this issue, and we thank Ms Marina Jimenez for her hard work in creating the database in AxiUm for the prescription module. As always, we invite your comments, questions, and suggested topics for future bulletins. Please forward your comments to Ms. Latresa Lawson at llawson@usc.edu or (213) 821-2336.

COMMON SENSE DRUG INFO

Which drugs are most commonly prescribed to patients?

Top 11: Vicodin, Lipitor, Premarin, Synthroid, atenolol, furosemide, Prilosec, Norvasc, alprazolam, propoxyphene

(Prenarin will probably not be in the top 11 next year! It is surprising that there were no antibiotics in the top 11. Maybe the information about antibiotic resistance and abuse of antibiotics has finally taken hold!)

Is it true that grapefruit juice can alter the metabolism of drugs?

Yes. The first case report involved a patient whose blood levels of a calcium channel blocker were 3 to 4 times expected. No explanation could be found for the increase (no renal or liver failure). The patient admitted to drinking grapefruit juice daily. It turns out that a component in the juice is an inhibitor of the liver microsomal enzymes. In this instance the metabolism of the calcium channel blocker was inhibited by the grapefruit juice.

Other inhibitors of the liver microsomal enzymes include erythromycin, cimetidine, fluconazole, ketoconazole, itraconazole, and fluoroquinolones. It is possible to test for these drug interactions in vitro. The information about possible drug interactions should then be available when the drug is first out on the market.

Where is the best location to store medications?

All medicines should be stored out of the reach of children, even though the packaging might be "child proof." A dark, cool, dry location is generally best. The bathroom is a poor location because of the moisture present.

Is a generic drug always equivalent to a brand name drug?

Although drug companies are required to prove bioavailability, they do not test all of the lots of drugs. Many drugs that are available generically have equal efficacy with the brand name drugs. Some drugs have special formulations and/or narrow therapeutic indices. Patients who take these medications should probably stick to one brand and not switch to a different generic or another brand. Some examples of such drugs would include digoxin, phenytoin, and cyclosporine. It is always possible to titrate the dose of a generic drug to the patient's response. Once that has been accomplished, any changes in brand could potentially result in loss of the response or, conversely, toxicity.

Do herbal medicines have any harmful effects?

Yes. Ephedra is a good example of an herbal medication that has caused deaths. All medications (unless they are placebos) have the potential to cause toxicity. Drug interactions are also of concern with herbal medications.

There is plenty of information in the literature to find out if drug interactions occur with drugs prescribed in dental practice. One of the most worrisome adverse effects of herbal medications is anticoagulation. Many herbal medications seem to have this property, which could, of course, result in unexpected bleeding. In taking the medication history, it is essential to see if the patient is taking herbal medications as well as over the counter medications.

If a patient is taking oral contraceptives, will antibiotics interfere with the activity of the oral contraceptives? Does the patient have to use additional birth control methods while taking the antibiotics?

It is believed that some antibiotics reduce the bioavailability of oral contraceptives slightly. It is believed by some that this effect is extremely slight. However, the net result of this effect is potentially an unwanted pregnancy. The situation, although unlikely, is compounded by the fact that sometimes a patient may forget to take the oral contraceptive, thus also compromising its efficacy. One dose of an antibiotic (i.e. AHA prophylaxis regimen) is not a problem. In order to be extra careful, if antibiotics are to be prescribed for an infection, and the patient is taking oral contraceptives, it is recommended that the patient use additional means of contraception for the entire remaining cycle. The reason that this conservative approach is recommended is a litigious one. A dentist lost a court case where an unwanted pregnancy occurred with this exact scenario (oral contraceptives and antibiotics prescribed by the dentist) and the dentist had to pay child support until the child was 18.

When a patient who has a prosthetic heart valve is already taking amoxicillin for a sinus infection, does the patient need additional/different antibiotics prior to invasive dental procedures per the AHA guidelines?

Yes. The amoxicillin that the patient is already taking is not adequate to prevent a dentally induced bacteremia.

The AHA specifically states that a different antibiotic should be prescribed, and this antibiotic should be a “different” category of antibiotic. It is believed that if the valves should become infected with an organism from the oral cavity, the organism would probably be resistant to the current antibiotic. In the example noted, clindamycin would be the drug of choice. Although clindamycin is a bacteriostatic antibiotic, at the dosage of 600 mg (AHA’s recommended dose) it is considered to be bacteriocidal, and could be administered while the amoxicillin (also bacteriocidal) regimen is also being taken.

My patient has mitral valve prolapse. Does my patient need prophylactic antibiotics per AHA guidelines?

Mitral valve prolapse, (MVP) is believed to be an innocent finding in many patients (a variant of normal). Unless the patient has MVP with regurgitation (leakage), prophylactic antibiotics are not indicated. The presence or absence of regurgitation is generally determined by an echocardiogram. Male patients over the age of 45, with MVP but without regurgitation, have been shown to be at increased risk for infective endocarditis (IE). It is not clear why. Males who fall into this group should have a consult with a cardiologist to determine whether or not they are at risk for IE and thus have to take prophylactic antibiotics prior to invasive dental procedures.

My patient’s physician wants prophylactic antibiotics to be prescribed when they are clearly not indicated. Should I follow the physician’s recommendations?

No. Clearly, dentists are under no obligation to render treatment that is not in the patient’s best interests. However, it is possible that the physician or the patient might not have been clear on the exact nature of the medical situation. An M.D. consult would be indicated to verify the current medical conditions.

There is danger (from adverse effects including anaphylactic reactions) in prescribing antibiotics when they are not indicated. Inappropriate use of antibiotics is a contributing factor in the development of drug resistance.

All prescribers should make sure that there are clear indications for antibiotics prior to prescribing them. When giving informed consent, patients need to be made aware of all risks and benefits. Hopefully, a physician and patient will come to an agreement based on evidence from the literature. In the M.D. consult, it might be possible to bring to the physician's attention pertinent current literature as it relates to the shared patient. Each healthcare professional is legally liable for his or her own treatment decisions.

My patient has indicated an interest in quitting smoking. Can a dentist prescribe medications for smoking cessation?

Yes. Dentists are strongly encouraged to help patients with smoking cessation by counseling them and prescribing smoking cessation medications. The ADA Accepted Dental Therapeutics book is a good reference and has the protocols that are currently believed to be the most efficacious. It is very important to note that the counseling component is absolutely essential to ensuring the patient's success. Prior to embarking on helping a patient with smoking cessation, the dentist should be thoroughly familiar with what is required and willing to make that commitment to the patient.

Did you know?

The Prescription module in Axium has been instrumental in allowing us to improve patient safety as well as prevention of medical errors, via an automated prescription entry system. The USCSD Axium program now houses 98 commonly prescribed medications in our clinic. Included in a pull down menu are, the drug name, the doses and routes of administration available. Once the drug and dosage of choice is selected, the provider enters the script and refill portion. The prescription is automatically entered into the Therapy section of the patient record along with the Provider and Provider number. In the future, we will be able to have an automated printed copy available for the patient as well.

In addition to the ability of the program to reduce prescription errors, we will be able to produce reports for outcome assessment purposes. The implementation of this program is an integral part of Quality Assurance for our USCSD patients.

Also did you know?

