

Mar 2005

Hello,

This month's picks includes a piece about American Cancer Society Guidelines for the Early Detection of Cancer. I think they should be of interest to you in managing your patients,. These guidelines can not be included here in toto, due to lack of space, but they are available at –<http://caonline.amcancersoc.org/cgi/content/full/55/1/31>

From what I have heard and read, we are going to have the dubious distinction of world's biggest pool of diabetes patients by 2020. So one article, which is a mine of information about diabetes may come in handy for you; but there is one caveat, you have to have a PC and an internet line, and you have wealth of information at your fingertips (or at your 'mouse' tip, if you may !)

It is stated commonly that the earlier in pregnancy bacterial vaginosis is diagnosed, the greater is the increase in risk of preterm birth compared with women without bacterial vaginosis. One study found that although bacterial vaginosis was associated with an increased risk of preterm birth, the gestational age at which bacterial vaginosis was screened for and diagnosed did not influence the increase.

Then there is one abstract involving diagnosis of tuberculosis. Despite being a common disease, we have not been able to devise a great tool which can help the diagnosis in quick and economical way. Here is an article examining the efficacy of ZN stain, Routine and BACTEC culture and PCR assay. I hope you will find this interesting.

From diagnosis to treatment. The article 'Toward a New Therapy for Tuberculosis' examines the new drug currently called R207910. I think this will surely interest you. I have just snipped a paragraph or two from the full text to give you some idea about it; But full text is available at <http://content.nejm.org/cgi/content/full/352/9/933>

We all knew that pulmonary tuberculosis is major risk factor for lung cancer. But why it is so was not so clear. The last abstract examines this issue and its authors found that lung tumours with M-TB infections had a slightly higher abnormal FHIT protein expression compared to tumours without M-TB infection.

If you think that this month's digest is loaded with Koch's, you have a reason to feel so. But these are the few articles I found interesting enough to include here. Hope I did not bore you.

~ Sachin ☺

(CA Cancer J Clin 2005; 55:31-44)

American Cancer Society Guidelines for the Early Detection of Cancer, 2005
Robert A. Smith, PhD, Vilma Cokkinides, PhD and Harmon J. Eyre, MD

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Each January, the American Cancer Society (ACS) publishes a summary of its recommendations for early cancer detection, including guideline updates, emerging issues that are relevant to screening for cancer, and a summary of the most current data on cancer screening rates for US adults. In 2004, there were no updates to ACS guidelines. In this article, we summarize the current guidelines, discuss recent evidence and policy changes that have implications for cancer screening, and provide an update of the most recent data pertaining to participation rates in cancer screening by age, gender, and insurance status from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System.

(Indian Journal of Medical Sciences Year : 2005, Volume : 59 , Issue : 1 , Page : 32-42)

Internet resources for diabetes

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Internet is transforming lives of many people in the world. Nowadays Internet has become one of the most common media to extract information of interest to researchers. The Internet is composed of a large number of smaller interconnected networks called Intranets. These Intranets connect thousands computers enabling them to share information with each other and to share various resources such as powerful super computers, software and databases of information. It has made it possible for people all over the world to effectively and inexpensively communicate with each other. The Internet has become world's biggest library where retrieval of scientific resources is only a mouse click away. The geometric growth in Internet usage is mainly due to the great success of "World Wide Web". Various useful databases on diabetes are already on 'the Net' and many more being added regularly. The present article is an attempt to provide a review of several sites that may be of great significance to the diabetes researchers before execution for new assignment/project.

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A banker is someone who lends you an umbrella when the sun is shining, and who asks for it back when it start to rain. (2) - cont.

<http://www.indianjmedsci.org/article.asp?issn=0019-5359;year=2005;volume=59;issue=1;spage=32;epage=42;aulast=Yadav>

Am J Obstet Gynecol. 2005 Feb;192(2):470-7.

Is bacterial vaginosis a stronger risk factor for preterm birth when it is diagnosed earlier in gestation?

Klebanoff MA, Hillier SL, Nugent RP, MacPherson CA, Hauth JC, Carey JC, Harper M, Wapner RJ, Trout W, Moawad A, Leveno KJ, Miodovnik M, Sibai BM, Vandorsten JP, Dombrowski MP, O'Sullivan MJ, Varner M, Langer O; National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network.

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OBJECTIVE: It is stated commonly that the earlier in pregnancy bacterial vaginosis is diagnosed, the greater is the increase in risk of preterm birth compared with women without bacterial vaginosis. However, this contention is based on small numbers of women. **STUDY DESIGN:** In this analysis of 12,937 women who were screened for bacterial vaginosis as part of a previously conducted clinical trial, the odds ratio of preterm birth (<7 weeks of gestation) for asymptomatic bacterial vaginosis-positive versus bacterial vaginosis-negative women was evaluated among women who were screened from 8 to 22 weeks of gestation. **RESULTS:** The odds ratio of preterm birth among bacterial vaginosis-positive versus bacterial vaginosis-negative women ranged from 1.1 to 1.6 and did not vary significantly according to the gestational age at which bacterial vaginosis was screened. The odds ratio for preterm birth did not vary significantly by gestational age at diagnosis when bacterial vaginosis was subdivided into Gram stain score 7 to 8 or 9 to 10. **CONCLUSION:** Although bacterial vaginosis was associated with an increased risk of preterm birth, the gestational age at which bacterial vaginosis was screened for and diagnosed did not influence the increase.

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Abraham Lincoln was once talking with a woman about how the North must treat the South.

She disagreed with him, and said that she felt that we must destroy our enemies. Lincoln replied, "What, madam? Do I not destroy them when I make them my friends?"

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Comparison of the conventional diagnostic modalities, bactec culture and polymerase chain reaction test for diagnosis of tuberculosis

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PURPOSE: To evaluate the performance of 65 kDa antigen based PCR assay in clinical samples obtained from pulmonary and extrapulmonary cases of tuberculosis. **METHODS:** One hundred and fifty six samples were processed for detection of *Mycobacterium tuberculosis* by ZN smear examination, LJ medium culture, BACTEC radiometric culture and PCR tests. **RESULTS:** A significant difference was seen in the sensitivities of different tests, the figures being 74.4% for PCR test, 33.79% for ZN smear examination, 48.9% for LJ culture and 55.8% for BACTEC culture ($P < 0.05$). However, there was no significant difference ($P > 0.05$) as far as specificity of different tests was concerned. PCR test sensitivity in pulmonary and extrapulmonary clinical samples were 72.7% and 75.9% respectively and found to be significantly higher ($P < 0.05$) when compared with those of other tests. The mean detection time for *M.tuberculosis* was 24.03 days by LJ medium culture, 12.89 days by BACTEC culture and less than one day by PCR test. **CONCLUSIONS:** PCR is a rapid and sensitive method for the early diagnosis of pulmonary and extrapulmonary tuberculosis.

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A budget is just a method of worrying before you spend money, as well as afterward.

A conclusion is simply the place where you got tired of thinking.

Toward a New Therapy for Tuberculosis

Eric J. Rubin, M.D., Ph.D.

To pinpoint the target of one compound, Andries et al. used a method that would have been inconceivable only a few years ago. They selected independent *M. smegmatis* and *M. tuberculosis* variants that were resistant to a candidate compound (currently called R207910). Instead of relying on traditional genetic methods, they sequenced the entire genomes of three resistant strains (and, in the case of *M. smegmatis*, the drug-sensitive parental strain). These strains had a number of genetic changes in relation to their parental strains. Most changes were scattered throughout the genome. However, all three strains carried mutations in a gene encoding part of the F₀ subunit of ATP synthase, the critical protein complex required to synthesize ATP. Indeed, introducing a copy of the mutant gene into an otherwise drug-sensitive strain of *M. smegmatis* rendered the strain resistant. This finding represents very strong evidence that R207910 blocks the synthesis of ATP, a completely novel antibiotic activity. However, even though the F₀ ATP synthase is found in all bacteria, R207910 has limited activity against other bacterial species.

The identification of a promising new compound for the treatment of tuberculosis is exciting. Current regimens require treatment with multiple drugs (including isoniazid, rifampin, pyrazinamide, and ethambutol) for several months. It is difficult to comply with this complex and prolonged regimen, and consequently, there is a substantial rate of treatment failure, even among patients with drug-sensitive disease. Thus, the availability of a more potent antibiotic that could clear infection more rapidly would be very valuable.

Andries et al. did much more than simply identify the compound and its target. They showed that this compound is active against a number of drug-resistant strains of *M. tuberculosis*. They found that R207910 is not toxic in mice and can eradicate the infection. In fact, a three-drug regimen that included R207910 in place of isoniazid cleared the infection more rapidly and effectively than did the traditional combination. Initial data suggest that the agent has no serious short-term effects that would create barriers to its use in humans.

None of these findings guarantee that R207910 will be a successful antibiotic. Like any drug, it could turn out to be toxic during long-term use. *M. tuberculosis* organisms seem to enter an antibiotic-tolerant state — an event that is probably more frequent in human infections than in mouse infections — and we do not yet know how effectively R207910 will deal with this problem. Nevertheless, this is clearly the most promising new antituberculosis agent that has been identified in many years.

(Cancer Lett. 2005 Mar 10;219(2):155-62.)

Mycobacterium tuberculosis infection and FHIT gene alterations in lung cancer.

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Although it is fairly well accepted that pulmonary tuberculosis is a major risk factor of lung cancer, the exact molecular mechanisms involved in its tumorigenesis are unclear. For this purpose, we have examined the relationship between Mycobacterium tuberculosis (M-TB) infection and FHIT gene alteration in lung cancer. Tumors with M-TB infection had a slightly higher abnormal FHIT protein expression compared with tumors without M-TB infection, although not statistically significant (Fisher's exact test, $P=0.248$). LOH affecting at least one locus of the FHIT gene was significantly more frequent in lung cancer patients with M-TB infection than in patients without M-TB infection whether assessment by univariate testing methods or logistic regression modeling analysis (Fisher's exact test $P=0.025$, logistic regression analysis $P=0.012$). These results indicate that M-TB infection is associated with FHIT gene LOH in lung cancer.

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How do you tell the difference between male chromosomes and female chromosomes?

Pull down their genes!

A Code Of Ethical Behavior For Patients !

- 1. Do not expect your doctor to share your discomfort. Involvement with the patient's suffering might cause him to lose valuable scientific objectivity.*
- 2. Be cheerful at all times. Your doctor leads a busy and trying life and requires all the gentleness and reassurance he can get.*
- 3. Try to suffer from the disease for which you are being treated. Remember that your doctor has a professional reputation to uphold.*
- 4. Do not complain if the treatment fails to bring relief. You must believe that your doctor has achieved a deep insight into the true nature of your illness, which transcends any mere permanent disability you may have experienced.*
- 5. Never ask your doctor to explain what he is doing or why he is doing it. It is presumptuous to assume that such profound matters could be explained in terms that you would understand.*

(6)

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