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Journalscan

The Editors

Abstract

This is a short collection of interesting items pertinent to medicine and science in general. It gives a taste of some of the current work in hand around the world. We would welcome any contributions of this nature, just a short chatty narrative of an interesting or amusing article that you have seen or read.

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Breast Results ?

Edinburgh was one of the centres entered in the UK Trial of the Early Detection of Breast Cancer (TEDBC), the seven year mortality results of this huge trial have just been published (Lancet 1990; 335:241-6).

The main objective of this trial is to compare the mortality from breast cancer in areas in which screening was offered to that in other areas. Unfortunately the results after seven years are inconclusive, since the reduction in mortality (17%) is too small to be significant. This statistic includes in the study population all those women who were invited to attend a clinic for screening; only 61% attended initially and this number fell each year (to as low as 47.6% in 60-64 age group). This absolutely appalling attendance should be compared to Sweden where the response rate from women was 74%.

It is now extremely rare there for any women to present with advanced and inoperable disease in comparison to this country in which 35% of women fall into this category. Surely vast improvements are desperately needed in education, without this any full scale screening programme would be a vast, expensive disaster. It will however be

several years before the final effects of this trial are measurable since the detection rate for cancer in the screened population was higher than in controls; hopefully a reflection of earlier detections in screened women. Perhaps it is still possible for some positive result to emerge from this extensive trial.

Just a Nibble...

On a slightly lighter note, a fascinating report on "Traumatic Love Bites" (Br.J.Surg. 1990, vol 77, 100-101) discusses some unusual problems! Given the choice, my advice to the reader would be to be bitten by a dog in preference; while dogs mouth's are normally sterile, the range of potential infections following human bites includes alpha-haemolytic streptococci and *Bacteroides* species.

Seven cases are reported, including a young man who presented with a bleeding neck. Although the bleeding itself was trivial the bite marks were deep enough to traumatise the external jugular vein. A second example was of a man with a supraclavicular, hard, non-tender mass with a central hole. On excision a broken plastic tooth was removed, this was later found to have originated from a love bite by a lady dressed as a vampire at a Halloween party a year previously!

Phaging Phat

The understanding of the aetiology of atherosclerosis has spawned a bewildering array of theories but no single causative method yet mooted has held much water on its own merit.

Two papers in Nature (1, 2) may have changed that. A group in Massachusetts have been working on scavenger receptors on macrophages found in atherosclerotic plaques which may lead to their accumulation of low density lipoprotein (LDL) from the blood. The receptors detect a change in the charge of LDL caused by the acetylation of lysine moieties on the particle, this effect is also mimicked by the oxidation of the complex constituents of LDL. Result the macrophages chomp up these altered blood components and become chubby little foam cells.

Trouble is that the oxidised lipoproteins might cause these corpulent corpuscles to release polypeptides to stimulate a local tissue reaction that is not best contained in the cramped confinement of an artery wall. That is just the start of the trouble... What is more, oxidised LDL seems to accumulate and transfer lysolecithin, an amphiphile, to arterial endothelial cells producing a selective unresponsiveness to endothelium dependant vasoregulatory stimuli *in vitro* (3) this closely equates to the vasoregulatory impairment observed in atherosclerotic vessels. Anyway, guess what can best oxidise LDL in the blood, yup, you gottit, cigarette smoke. Down the cancer stix guys.

1. Kodama, T. et al. Nature 343, 531-535 (1990)
2. Rohrer, L. et al. Nature 343, 570-572 (1990)
3. Kugiyama, K. et al. Nature 344, 160-162 (1990)

Heated topic

Well, I'm doing anaesthetics at the moment and have just been told about malignant hyperthermia, a potentially lethal condition which can be triggered by anaesthetics (or caffeine, ooerr!) in some individuals. It has an autosomal recessive or codominant inheritance and the condition gives rise to a sustained contraction of striated muscle chewing up masses of ATP and evolving lots of unwanted kiloJoules. Result the bod is cooked, and it tends to ruin the anaesthetist's usually unfettered day with a dead patient. Testing up to now has been by muscle biopsy, impractical in large numbers, but now there is the hope of a recombinant DNA technique to indicate susceptibility (1). The gene locus responsible has been localised to chromosome 19q12-13.2, quite a big chunk below the centromere, still it is a good start. Better still one group has found that the gene for susceptibility is snuggled up to a gene for a calcium ion release channel, perhaps even the two are the same. Sounds sort of positive to me, they also confirm that the gene that they are looking at is on chromosome 19, more specifically in the q13.1 band (2). Check it out.

1. MacLennan, D.H. et al. Nature 343, 559-561 (1990)
2. McCarthy, T.V. et al. Nature 343, 562-563 (1990)

Blue Genes

There is work afoot to perform human gene therapy in the US for children with the fantastically rare severe combined immunodeficiency who lack the gene for a deaminase which normally mops up toxins that destroy the immune system. Solution; readminister T-lymphocytes, the sort nobbled by HIV, that have been genetically repaired with the correct gene and then souped up with a

course of Interleukin-2 which gets them into a fighting fit state. The therapy may fail, give a temporary or even a lasting effect. We will never know if the Recombinant DNA Advisory Committee of the National Institutes of Health gives the trial the thumbs down. Peel your peepers.

1. Gershon, D. *Nature (News)* 344, 2 (1990)

Cold Comfort

Sniffing? 50% of colds are caused by rhinoviruses which enter cells via an interaction with a cell membrane bound receptor called Inter-Cellular Adhesion Molecule-1 (innovative eh?) or ICAM-1. A US group has chopped the intra-membrane and intracellular moiety off ICAM-1 and found that the sICAM-1 (soluble) will inhibit the cytopathic effects of rhinoviruses but not other viruses.

Wait though, the stuff has to be proved in vivo and then the problems of sensitivity to the new protein may cause anaphylaxis (immediate severe allergy, may be life threatening) or more sinister, may provoke an autoimmune response. Best is that it is a novel approach to the production of antiviral drugs that up till now have concentrated on koshing the bug after it has got into the cell.

1. Marlin, S.D. et al. *Nature* 344, 70-72 (1990)

Trial tried

Trials for a new drug to combat HIV have taken on a new guise in St. Mary's Hospital in London. The drug is dideoxyinosine (ddI) which inhibits reverse transcriptase, and, to date shows no advantage over AZT, the current drug therapy for AIDS victims. The trial is novel in that it allows patients to

choose whether they may have placebo or not, this overcomes fears that drug trials may withhold therapy from some patients. Option A is a standard randomisation into placebo, low dose and high dose ddI groups, Option B just excludes the placebo group. Some patients are already booked into option A.

1. Aldhous, P. *Nature* 344, 95 (1990)

Chili chomping

A letter to Nature mentioned that research in remote areas can be hampered by animals chewing cables and equipment. In Britain the critters would probably be shot, poisoned or electrofrazzled, however workers in Alaska devised a more subtle and devious ploy. They sprinkled 'Tabasco' sauce onto the installations, lo and behold no more techno-chomping, it seems that wildlife is incapable of the 'hedonic shift' present in crazy humans who gulp gallons of the concentrated nerve poison.

1. Nelson, F.E. *Nature* 344, 115-116 (1990)

Blood Feud

Interesting things have been happening in New York with regard to patient rights. A Jehovah's Witness was given a blood transfusion against her wishes after a massive post-partum haemorrhage on the basis that her child would be harmed through being deprived of her care. S'prise, s'prise, she took it to court and won the right not to have had a transfusion in that other family members have been deprived of the opportunity to show that they could have cared for the child should the woman have died. Confused? I think they all are. It is now an absolute 'right' in New York to refuse a blood transfusion.

1. Charatan, F. *BMJ* 300, 491-492 (1990)

Whiter than White?

It seems that some of the ecoconcern of the modern world is tripping over itself rather. Modern washing methods are energy-conscious, low temperature and environment-friendly, low tripolyphosphate. All well and good, but the wily Italians have shown that our sox and undies et al. can develop the most tenacious collections of organic gunge on a microscopic level. What the eye cannot see etc. But the bugs and greublies don't care, it is their first foothold to gnashing the fibres and jumping onto warm and moist bodies. The main problem is to get an adequate detergency to scoop the gloop and reduce the bug farm on your wardrobe without turning the rivers into algae holiday homes and stagnating lakes.

1. Dixon, B. *BMJ* 300, 528-529, (1900)

Choleconfusion

I was just in the States (gloat) and I noted an intense interest to reduce salt and cholesterol intake and stuff as much bran in as could fit. That's OK, but it was pathological in some parts of the country, 'You can tay'll when th'y'rall from California 'cos th'y'all ask for caffeine-free herbal tea and vegetable flakes.', quote from New Orleans waiter. Well studies show that lowering cholesterol intake has a minimal effect on blood cholesterol levels and that high bran diets, or low fibre wheat supplements for that matter, lower cholesterol concentration by the same amount, simply by the fact that the subjects reduced their intake of cholesterol and fat while on the supplements. What can we do. The old story...sensible eating, less saturated fat an more fibre. Cut the overkill folks.

1. McBride, G. *BMJ* 300, 560 (1990)

Coffee Crisis

Well it *is* certain that high blood cholesterol correlates with a raised risk of coronary heart disease, it is now becoming certain that coffee consumption has a relationship with raised plasma cholesterol concentrations, and more...

A recent study has examined death from coronary heart disease and related this to coffee consumption (1). There is a clear correlation, but worse than that the effect due to coffee seems to be a little, but significant, bit more than the cholesterol raising effect alone.

So, while I remonstrate over the rim of my cup about cigarette smoking, I am now left with the potential consequences of my own vice of >9 cups of treacle like coffee a day. I must move onto tea. I have one theory why Scandinavians drink so much coffee, it is because they make such awful tea. Ignorance! you might say, but how would you like tea made in a filter coffee machine?

I said there was more...Another group is suggesting a link between parental coffee consumption and the genesis of insulin dependant diabetes mellitus (2) some demon drink this!!

1. Tverdal, A. *BMJ* 300, 566-569 (1990)

2. Tuomilehto, J. *BMJ* 300, 642-643 (1990)

If you have a contribution for Journalscan send it to the RMS office for the next issue addressed to the Editors, Res Medica and see your name in print.