phosphatase 643 U/L (normal range 0–120 U/L); total bilirubin 105·5 μmol/L (normal range 0–18 μmol/L); 0·052±X10L, eosinophils were also noted. All serum markers for viral agents and autoimmune phenomena were negative on two occasions and two abdominal ultrasonographic assessments excluded any obstructive causes for the jaundice.

As the liver enzymes decreased, the bilirubin peaked at 256·5 μmol/L 1 month after stopping the drugs and pruritus appeared. Eosinophil count remained stable. Bilirubin remained raised for 1 month and slowly declined thereafter. 18 weeks after stopping raloxifene, the patient had total bilirubin of 18·5 μmol/L, direct bilirubin 8·95 μmol/L, 43 U/L, alanine aminotransferase 36 U/L, and alkaline phosphatase 365 U/L.

The presence of a rash and a mildly raised eosinophil count opens the question of an immune mechanism being involved. Since raloxifene is often used extensively, it has been suggested that they may prevent suicides; and there are isolated reports of survivors of suicide attempts, despite long exposure to exhaust fumes. There has, however, been no evidence of the influence of catalytic converters on suicide rates.

Scottish suicide data (table) show that the proportion of all suicides among men attributed to poisoning by gases other than those in domestic use (E952) has fallen steadily from 35% to about 5% in men aged 15–29 years. The proportion of suicides among women due to poisoning by other gases and vapours (E952) have catalytic converters to comply with a mandatory European Directive restriction on exhaust emissions, and by the end of 1997, 36% of cars had these converters. Because catalytic converters decrease the carbon monoxide content of exhaust gases from about 3·5% to about 0·5%, as well as removing oxides of nitrogen and sulphur, it has been suggested that they may prevent suicides; and there are isolated reports of survivors of suicide attempts, despite long exposure to exhaust fumes. There has, however, been no evidence of the influence of catalytic converters on suicide rates.

Catalytic converters and prevention of suicides

All petrol cars sold in the UK since Dec 31, 1992, have had to have catalytic converters to comply with a mandatory European Directive restriction on exhaust emissions, and by the end of 1997, 36% of cars had these converters. Because catalytic converters decrease the carbon monoxide content of exhaust gases from about 3·5% to about 0·5%, as well as removing oxides of nitrogen and sulphur, it has been suggested that they may prevent suicides; and there are isolated reports of survivors of suicide attempts, despite long exposure to exhaust fumes. There has, however, been no evidence of the influence of catalytic converters on suicide rates.

Scottish suicide data (table) show that the proportion of all suicides among men attributed to poisoning by gases other than those in domestic use (E952) has fallen steadily from 35% in 1990-92, before the European directive came into effect, to 14% in 1997 (χ² for trend=32·37 and p<0·001 with 1 df). In women the decrease is less, from 9% to 4%, but is still significant (χ² for trend=5·80, p<0·02 with 1 df). Equivalent data for England and Wales (table) are not available. Because of a change in the coding rules used by the Office of National Statistics, comparisons of data before and after 1991 are difficult, and detailed suicide statistics are not yet available for 1997. The proportion of suicides attributed to poisoning by other gases and vapours, however, fell progressively in men from 35% in 1991-92 to 25% in 1996, and in women from 14% in 1991-92 to 10% in 1995 and 12% in 1996 (men χ² for trend=80·30, p<0·001; women χ²=5·50, p<0·02).

These numbers suggest that the introduction of catalytic converters has decreased the number of suicides without substitution of other methods. Evidence is strongest in England and Welsh men; since 1992 the rate of E952 deaths has fallen by 39%, and suicides by 35% (12%). Among Scottish men, despite the fall in suicides due to poisoning by other gases, total suicides have not decreased, but other influences may be driving the rate up. Certainly, the suicide rate had been rising throughout the 1980s, especially in men aged 15–29 years. The proportion of suicides among women due to poisoning by other gases and vapours has always been lower, partly because fewer women own cars.

As with the removal of carbon monoxide from domestic gas in the UK in the 1960s, catalytic converters may lead to a sustained fall in UK suicide rates.

Suicide data for Scotland 1980–97 and England and Wales 1991–95

Other gases and vapours have always been lower, partly because fewer women own cars.

As with the removal of carbon monoxide from domestic gas in the UK in the 1960s, catalytic converters may lead to a sustained fall in UK suicide rates.


Royal College of Psychiatrists, London SW1X 8PG, UK (R E Kendell)

Direct estimation of maternal mortality in Africa

Sophie Le Coeur, Gabriel Pictet, Pierre M’Pelé, Marc Lallemant

Maternal mortality ratios, defined as the number of maternal deaths per 100 000 live births, are reportedly highest in Africa. These statistics should, however, be viewed cautiously because civil registers of cause-of-death are commonly incomplete or inaccurate and denominator statistics are seldom available; many patients are lost to follow-up, which means that the results of population-based surveys can be difficult to interpret; retrospective studies using data from large surveys with indirect methods can be subject to recall bias, and AIDS-related deaths have probably led to overestimation of maternal mortality with these methods; and postabortion deaths are under-reported, especially in countries where abortions are illegal.

We investigated maternal mortality in Brazzaville, Congo, where law requires the delivery of all bodies to a mortuary before burial. Following the WHO definition, we defined maternal death as a death that occurred during pregnancy or within 42 days of termination of pregnancy from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. From June 10 to July 9, 1996, we investigated all bodies handled by the city’s three mortuaries. We examined cadavers, interviewed relatives who delivered the body (93% of the cases) and, for those bodies of people previously...
Evaluation of cyberdocs
Gunther Eysenbach, Thomas L Diepgen

People consult the worldwide web to seek health information and to ask medical questions via e-mail. Several commercial and free medical services have been set up to respond to this demand. This cybermedicine has raised concerns. To shed some light on this new type of doctor-patient interaction and to assess the quality of these services, we posed as a patient, as interviewed medical staff shortly after death.

Admitted to hospital, we assessed hospital files and interviewed medical staff shortly after death. Among the 138 female adult bodies (aged 15–49 years), 15 maternal deaths were identified (table). Based on the number of live births (27 888) from Sep 1, 1995, to Aug 31, 1996, and the age distribution of the mothers, we estimated the rate of maternal mortality to be 645 per 100 000 and the lifetime risk of maternal death to be one in 25 women.

This rate is very high for an African capital city in which about 90% of the women have access to prenatal care, and most babies are delivered in maternity hospitals. Excess maternal mortality is explained partly by the high number of abortion-related deaths in young women, freely disclosed by families at the mortuary. Most of the other deaths could have been prevented in better equipped or managed hospitals.

We were able to make direct reliable estimation of maternal mortality by a method that can be easily replicated. Access to prenatal care and to maternity hospitals does not necessarily lead to better maternal survival. Maternal mortality is therefore unlikely to decrease in African cities until obstetric care and promotion of safe reproductive choices are improved.


Institut National d'Etudes Démographiques, 75780 Paris Cedex 20, France; Departamento Nacional de Saúde Publica; Bauru, Sao Paulo, Brazil; and Institut Francais de Recherche Scientifique pour le Développement en Coopération, Paris

Any idea what this could be? Any suggestions regarding therapy? Most important question: Do I have to see a doctor (I live in a rural area), or can I wait some days to see whether it goes away? Below you will find my credit card information, please charge me as you deem appropriate (but please tell me, how much the consultation was). Regards, Gunther (Germany)!

This request suggested a herpes zoster infection in an immunocompromised person, which requires immediate treatment with acyclovir.10 cyberdocs responded, of whom three refused to give advice because dermatology was not their area of expertise. The remaining seven provided advice (two for free, five for a charge), usually given within less than 8 hours. Advice given by five cyberdocs was accurate and the correct diagnosis of herpes zoster was given. In two cases, however, questionable information was provided. A self-described "well-known naturopathic doctor, lecturer, author, and a general family practitioner" wrote in his e-mail that "the fluid filled cysts are probably nothing to worry about" and recommended "the homeopathic medicine Apis 30D" and "vitamin C". US$25 was charged for this advice. Another self-described "nutritionist" who has offered "online analysis as well as information and advice on various illnesses and general health", diagnosed that "your eliminative organs may be congested (liver, spleen, gall bladder, kidneys, intestines, and skin). Make sure you get at least two good bowel movements a day. If you don't, have two apples and a warm glass of water immediately." His therapy advice as to "breathe deeply (fresh air), drink plenty of rain water, or RO water, or distilled water", "getting some enzymes, which help allergies", "consider eliminating all dairy and wheat products" and to "get Red Clover and Dandelion" and "eat as many as you can". This advice was given free of charge, but the writer offered to "send instructions on how to get it (Red Clover and Dandelion) delivered to your doorstep", so probably there was some commercial interest here. The patient was not encouraged to see a doctor.

Six of 10 of those offering free advice and one of seven offering commercial advice did not answer at all; patients may lose precious time while waiting for the answer of a cyberdoc before seeing a real doctor. None of the cyberdocs (all located in the US) objected to a "cross-border" consultation, which raises licensing and legal questions. Procedures should be considered to protect consumers from quacks and non-medically trained healers offering dubious health advice on the internet. Medically trained cyberdocs should be careful about answering diagnostic questions, limiting their advice strictly to general health questions. We propose that these services shall in the future be assessed by an independent international body which could issue a cyberlicence for cyberdocs who practice along these lines.

Patients should be warned that there are currently no means to determine the credibility or qualification of cyberdocs on the internet.

1 Eysenbach G, Diepgen TL. Patients looking for information on the Internet and seeking tele-advice: Their motivation, expectations and misconceptions as expressed in electronic mails sent to doctors. *Arch Dermatol* (in press).
4 <http://www.yahoo.com/Health/Advice/> (accessed 2.9.98).
5 <http://www.yahoo.com/Business_and_Economy/Companies/Health/Consulting/Medical_Advice/> (accessed 2.9.98).
7 Department of Public Health, Cybermedicine and Dermatoepidemiology, University of Heidelberg, 69115 Heidelberg, Germany (G Eysenbach; e-mail ey@y.com).
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EDITORIAL
1485 Making sense of hepatitis C

COMMENTARY
1486 Interferon β therapy for multiple sclerosis
D E Goodkin
1487 Leukotrienes and the brain
A A M Morris, I W Rodger
1488 Skin testing in systemic cutaneous drug reactions
V A DeLeo
1490 Heads or tails in a positive faecal occult blood test
S H Itzkowitz

ARTICLES
1491 Placebo-controlled multicentre randomised trial of interferon β-1b in treatment of disability in secondary progressive multiple sclerosis
European Study Group on Interferon β-1b in Secondary Progressive MS
1498 Randomised double-blind placebo-controlled study of interferon β-1a in relapsing-remitting multiple sclerosis
PRISMS (Prevention of Relapses and Disability by Interferon β-1a Subcutaneously in Multiple Sclerosis) Study Group
1505 Multicentre randomised study of computerised anticoagulant dosage
L Poller and others on behalf of the European Concerted Action on Anticoagulation

EARLY REPORT
1510 Sex differences in HIV-1 viral load and progression to AIDS
H Farzadegan and others
1514 Leukotriene C4-synthesis deficiency: a new inborn error of metabolism linked to a fatal developmental syndrome
E Mayatepek, B Flock

CASE REPORT
1518 Cutting edge of cardiomyopathy
I Pepping and others

RESEARCH LETTERS
1519 Thyroid abnormalities related to iodine excess from water purification units
L K Khan and others and the Peace Corps Thyroid Investigation Group
1520 Nosocomial child-to-child transmission of HIV
H Nielsen and others
1521 Smoking cheroots reduces birthweight
R McGready and others
1522 Graft-versus-lymphoma effect of donor leucocyte infusion shown by real-time quantitative PCR analysis of t(14;15)
C M P W Mandigers and others
1523 Screening for type-2 diabetes in aboriginal children in northern Canada
H J Dean and others
1524 Detection of an erythrovirus sequence distinct from B19 in a child with acute anaemia
Q T Nguyen and others
1524 Raloxifene-associated hepatitis
A R Vilches and others
1525 Catalytic converters and prevention of suicides
R E Kendall
1529 Head trauma treatment hope
Dividing neurons found in human brain
1530 Global epidemic of cardiovascular disease predicted
3

DISPATCHES
1531 Who wants to go to a US medical school? Austria's music-school deaths
1533 NIH on traumatic head injury
RCT reports reach middle age
1534 Green light for German health care

REVIEW
1535 Markers and management of germ-cell tumours of the testes
A Horwich and others

MEDICAL RECORDS
1539 How to limit clinical errors in interpretation of data
P Wright and others

LITERATURE AND MEDICINE
1544 Still life and the rounding of consciousness
G Davey

Contents list continues inside

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