

Editorial/Van die Redaksie

Asbestos in drinking water

It is not generally appreciated that probably far more people in the world ingest asbestos than inhale asbestos. This realization must accentuate the disproportionate concern which has dominated the industrial world in relation to asbestos-related tumours in the mining, milling and manufacturing industries as well as in the general environment. Nevertheless, much attention has been directed to possible dangers resulting from the ingestion of asbestos fibres in drinking water, in beer and even from wine filtered through Seitz filters.

Important research projects were embarked upon in Europe, Canada and the USA in order to assess the extent of the risks. No one disputed the hazards of inhaled asbestos fibres in uncontrolled conditions and in high concentrations, but there was no firm evidence that those who ingest asbestos from drinking water are at risk in either the short or the long term. Epidemiological studies were designed to assess the possible health implications of ingesting asbestos.

The notorious situation in the town of Duluth, Minnesota,¹ where the public water supply was heavily contaminated with asbestos owing to industrial discharge into Lake Superior, the town's water source, aroused great indignation after its discovery and led to greatly intensified study of the problem.

It is obvious that in many situations water may be contaminated with asbestos-cement pipes conveying effluent, and asbestos-cement roofs, guttering and downpipes also provide sources of contamination of some effluent water.

Asbestos cement is also used for the conveyance and storage of water. In many parts of the world, trunk mains and distribution pipes made of asbestos cement are widely used for potable water distribution. It is used as a construction material for water storage tanks and as covering material for reservoirs. Small amounts of asbestos could contaminate drinking water, especially when the material is in direct contact with water. The extent of possible contamination will depend on the type of asbestos-cement product, the nature of the contact surface, the age of the cement, the duration of contact and the type and properties of the water. It was estimated in 1978 that 320 000 km of asbestos-cement pipelines were operational in the UK — about one-third of the total length of the mains. In the Netherlands, in 1977, it was 45% of the total length and in Belgium 75%.²

A comprehensive study was carried out by the Water Research Centre in England³ which reported in January

1979 that mortality statistics in areas where asbestos levels in water were high revealed that there was no increase in gastro-intestinal tract cancer after 14 - 17 years of exposure to the asbestos-laden Lake Superior water.

A later detailed report of an epidemiological study in 22 municipalities in Quebec⁴ revealed no excess cancer mortality that could possibly be related to the asbestos fibres in drinking water. A comparative study of Connecticut water supplies in asbestos-cement and non-asbestos-containing pipes found no excess incidence of cancer of the gastro-intestinal tract over a 38-year period which could be related to the use of the pipes for conveying drinking water.⁵

Sources of ingested asbestos include various beverages such as soft drinks, beer, sherry, port, vermouth and even orange juice. Other sources of asbestos contamination, too numerous to mention, have also been shown to contribute to asbestos ingestion. By mid-1979 investigations by the Commission of the European Communities⁶ and the National Academy of Sciences⁷ concluded that there was no solid epidemiological evidence that gastro-intestinal exposure to asbestos may induce peritoneal mesothelioma, and that experience had not shown any relation between the prevalence of gastro-intestinal tumours and the presence of asbestos in drinking water. Nor was there any evidence of an increased health risk due to asbestos fibres in drinking water, beverages, food, and in fluids used for the administration of drugs. In 1978, in a leading article in the *British Medical Journal*,⁸ similar observations were made in this context. However, further studies were carried out and have now been assessed. In October 1982 the US Environmental Protection Agency held a workshop in Cincinnati to review and summarize all sponsored researches into ingested asbestos with a view to future action. The conclusions of the proceedings were: (i) all animal feeding studies have proved negative; (ii) all epidemiological studies have proved negative; (iii) that there would be no further research on the part of the Agency into ingested asbestos. The detailed report of the workshop is expected within 6 months.⁹

Further comment is unnecessary. No evidence whatsoever exists that ingested asbestos fibres in the concentrations possible in ordinary environments constitute a health hazard: fears relating to potable water in contact with asbestos under realistic conditions may now be abandoned.

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1. American Water Works Association Research Foundation. A study of the problem of asbestos in water — a committee report. *Journal of the American Water Works Association* 1974; Part 2, September: 5, 20.
2. Keurings Instituut voor Waterleiding Artikelen. Summary of the information collected concerning the relationship between asbestos and drinking water quality. KIWA internal report, 1977.
3. Water Research Centre, Stevenage, England, Technical Report TR 100, 1979.
4. Wigle DT. Cancer mortality in relation to asbestos in municipal water supplies. *Arch Environ Health*, 1977; 32: 185-190.
5. Craun GF, Millette JR, Woodhull RS, Laiuppa R. Exposure to asbestos fibres in water distribution systems. Paper presented at 97th American Water Works Association Conference, Anaheim, 8-13 May 1977.
6. Commission of the European Communities. *Public Health Risks of Exposure to Asbestos*. Oxford: Pergamon Press, 1977: 30, 54-60.
7. National Academy of Sciences. *Drinking Water and Health*. Washington DC: National Academy of Sciences, 1977: 160-168.
8. Leading Article. Risks of environmental exposure to asbestos. *Br Med J* 1978; i: 1164-1165.
9. US Environmental Protection Agency. *Workshop on Ingestion of Asbestos in Water* (in press).

Dokters en die doodstraf

Die wind wat vanaf die VSA waai, is geneig om die klimaat dwarsdeur die Westerse wêreld te beïnvloed. Daarom is dit belangrik om ag te slaan op onlangse gebeure in die VSA, wat die doodstraf en die betrokkenheid van die mediese professie daarin raak.

'n Paar jare gelede het dit gelyk asof baie beskaafde volke sterk gereageer het teen die toepassing van die doodstraf vir misdaad, maar nou is daar klaarblyklik nie minder nie as eenduisend veroordeelde persone in 'death rows' in Amerikaanse gevangnisse wat geregtelike teregstelling afwag. Hierdie verandering is teweeggebring omdat die hele gevoelsklimaat onder die Amerikaanse publiek gedurende die afgelope jare verander het, soos bewys deur 'n nasionale Gallup-stemming in 1981 wat aangetoon het dat twee-derdes van dié wat gestem het ten gunste van die doodstraf was. Klaarblyklik is slegs dertig van die VSA-state sonder 'n statuut wat dit moontlik maak om die doodstraf toe te pas. Dit is dus hoogs waarskynlik dat daar vanaf 1983 'n vlag van teregstelling sal wees.

Die mediese professie se betrokkenheid spruit uit die feit dat vier state — Oklahoma, Texas, Idaho en Nieu-Mexiko — nou 'n wet ingestel het wat voorsiening maak vir die dood d.m.v. 'n dodelike inspuiting. Die bedoeling van die wetsbepalers is dat dokters diesulke teregstellinge sal toedien, lei of toesig daarvoor sal hou.

Die Amerikaanse Mediese Vereniging het heel tereg sterk hierop kopsie gemaak op grond van die feit dat dit in die eerste plek die professie se plig is om geen skade aan enigiemand te doen nie. 'n Besluit deur die Amerikaanse Psigiatriese Vereniging lui: 'The physician's serving the state as executioner, either directly or indirectly, is a perversion of medical ethics and of his or her role as healer and comforter. APA therefore strongly opposes any participation by psychiatrists in capital punishment.'

In 'n onlangse verslag oor die huidige situasie in die VSA wys Casscells en Curran¹ daarop dat mediese groepe in die VSA sowel as die VK voorgestel het dat die nuwe metode hoegenaamd nie mensliker is as ander vorme van

teregstelling nie, en dat die nuwe wette gevaarlike politiese presedente sal skep indien hulle mediese personeel in staats-gelaste teregstellinge sou betrek.

In Oklahoma is die prosedure vir teregstelling hersien waarin die rol van die gevangenis-dokter wat 'n toksiese substans moet bestel of toesig oor die teregstelling moet hou, uitgeskakel word. Die nuwe prosedure verleen mag aan die tronkbewaarder of iemand deur hom aangewys om 'n dodelike dosis van intraveneuse tiopentoon te bekom en sonder 'n doktersvoorskrif toe te dien. Dit sluit egter nie mediese waarneming en toesig uit nie asook nie die uitvoering (deur 'n dokter) van 'n perifere venese insnyding of venese kateterisasie om die toediening te vergemaklik. Dit is nogal verrassend om te vind dat sommige dokters wat nie met die amptelike mediese siening saamstem nie ingewillig het om in hierdie teregstellinge behulpsaam te wees. Indien hulle dit egter sou doen, kan hulle in die moeilikheid beland, op etiese sowel as regtelike gebied, ingevolge die wette wat die beoefening van geneeskunde beheer. Regstappe is ook in die federale howe gedoen om die gebruik van voorskrifmiddels vir inspuiting te verhoed. Casscells en Curran sluit op 'n sombere noot af en verklaar dat dit hoogs waarskynlik is dat inspuiting met dodelike dosisse — met die bereidwillige betrokkenheid van ten minste sommige dokters — eersdaags 'n realiteit in die VSA sal word.

Die situasie het tot nou toe nog nie in die RSA ontstaan nie, maar enigiets kan in die toekoms gebeur. Daar is egter geen twyfel nie dat die Mediese Vereniging van Suid-Afrika, wie se riglyne op dié van die Wêreld Mediese Vereniging geskoei is, 'n soortgelyke houding sal inneem as hulle Amerikaanse ewebeeld, en dokters ten sterkste sal aanraai om geen aandeel te hê in iets wat heeltemal teenstrydig is met al die tradisionele beginsels van geneeskunde nie.

1. Casscells W, Curran WJ. Doctors, the death penalty and lethal injections: recent developments. *N Engl J Med* 1982; 307: 1532-1533.