Abstracts

South African and Ugandan patients with incurable diseases lack information

Lucy Selman and colleagues explored the information needs of patients with progressive, life-limiting disease and their family caregivers in South Africa and Uganda to inform clinical practice and policy in this emerging field. They used a semi-structured qualitative interview study.

The study took place in four palliative care services in South Africa and one in Uganda, covering rural, urban, and peri-urban locations.

The participants were 90 patients and 38 family caregivers enrolled in palliative care services; 28 patients had cancer, 61 had HIV infection (including 6 dual HIV/cancer diagnoses), and 1 had motor neuron disease.

Five themes emerged from the data: (*i*) information sources – a lack of information from general health care providers meant that patients and caregivers had to draw on alternative sources of information; (*ii*) information needs – patients and caregivers reported needing more information in the key areas of the causes and progression of the disease, its symptoms and treatment, and financial/social support; (*iii*) impact of unmet needs – poor provision of information had a detrimental effect on patients' and caregivers' ability to cope; (*iv*) communication – negative experiences of communication with general health care staff were reported (misinformation, secrecy, insensitivity); and (*v*) barriers to effective provision of information – barriers related to symptoms, culture, time constraints in hospital, and paternalism in general health care.

The authors concluded that lack of information was a major theme for both patients and carers, who had important unanswered questions relating to living with a progressive incurable disease. Evidence-based recommendations for clinicians are presented, including the proactive provision of information tailored to individual patients and families.

Selman L, *et al. BMJ* 2009; 338: b1326.

Home management of malaria using artemether-lumefantrine

Home management of malaria – the presumptive treatment of febrile children with antimalarial drugs – is advocated to ensure prompt, effective treatment of the disease. Sarah Staedke and colleagues assessed the effect of home delivery of artemether-lumefantrine on the incidence of antimalarial treatment and on clinical outcomes in children from an urban setting with fairly low malaria transmission.

In Kampala, Uganda, 437 children aged between 1 and 6 years from 325 households were randomly assigned by a computer-generated sequence to receive home delivery of prepackaged artemether-lumefantrine for presumptive treatment of febrile illnesses (N=225) or current standard of care (N=212). Randomisation was done by household after a pilot period of 1 month. After randomisation, study participants were followed up for an additional 12 months and information on their health and treatment of illnesses was obtained by use of monthly questionnaires and household diaries, which were completed by the participants' carers. The primary outcome was treatment incidence density per person-year. Analysis of the primary outcome was done on the modified intention-to-treat population, which included all participants apart from those excluded before data collection.

Eight participants in the home management group and 4 in the standard care group were excluded before data collection; therefore, the primary analysis was done in 217 and 208 participants, respectively. The home management group received nearly twice the number of antimalarial treatments as the standard care group (4.66 per person-year v. 2.53 per person-year; incidence rate ratio (IRR) 1.72, 95% CI 1.43 - 2.06, p<0.0001), and nearly five times the number given to children with microscopically confirmed malaria in a comparable cohort of children (4.66 per person-year v. 1.03 per person-year, IRR 5.19, 95% CI 4.24 - 6.35, p<0.0001). Clinical data were available for 189 children in the home management group and 176 in the control group at study end; the main reasons for exclusion were movement out of the study area or loss to follow-up. The proportion of participants with parasitaemia at final assessment in the intervention group was lower than in the control group (4 (2%) v. 17 (10%), p=0.006), but there were no other differences in standard malariometric indices, including anaemia. Serious adverse events were captured retrospectively. One child died in each group (home management – severe pneumonia and possible septicaemia; standard care – presumed respiratory failure).

The team concluded that although home management of malaria led to prompt treatment of fever, there was little effect on clinical outcomes. The substantial over-treatment suggests that artemether-lumefantrine provided in the home might not be appropriate for large urban areas or settings with fairly low malaria transmission.

Staedke S, *et al. Lancet* 2009; 373: 1623-1631.

Clinical blood pressure monitoring does not provide a true picture

Katherine Keenan and colleagues attempted to determine the value of monitoring blood pressure by quantifying the probability that observed changes in blood pressure reflect true changes. They used an analysis of blood pressure measurements of patients in the perindopril protection against recurrent stroke study (PROGRESS).

This is a randomised placebo-controlled trial carried out in 172 centres in Asia, Australasia, and Europe.

They looked at 1 709 patients with a history of stroke or transient ischaemic attack randomised to fixed doses of perindopril and indapamide.

Results were based on a mean of two blood pressure measurements in patients receiving treatment recorded to the nearest 2 mmHg with a standard mercury sphygmomanometer at baseline and at 3 months, 6 months, 9 months, and 15 months, and then every 6 - 33 months.

They found that there was no change in the mean blood pressure of the cohort during the 33-month follow-up. Six months after blood pressure was stabilised on treatment, if systolic blood pressure was measured as

having increased by >10 mmHg, 6 of those measurements would be false positives for every true increase of 10 mmHg. The corresponding value for an increase of 20 mmHg was over 200. Values for 5 mmHg and 10 mmHg increases in diastolic blood pressure were 3.5 and 39, respectively. The likelihood that observed increases in blood pressure reflected true increases rose with the time between measurements such that the ratio of true positives to false positives reached parity at 21 months.

They conclude that the usual clinical approaches to monitoring patients taking drugs to lower blood pressure have a low probability of yielding reliable information about true changes in blood pressure. Evidence-based guidelines for monitoring treatment response are urgently required to guide clinical practice.

Keenan K, *et al. BMJ* 2009; 338: b1492.

Cervical cancer screening still needed after age 50

Matejka Rebolj and colleagues looked at the incidence of cervical cancer after several negative cervical smear tests at different ages. They used a prospective observational study of incidence of cervical cancer after the third consecutive negative result based on individual level data in a Dutch national registry of histopathology and cytopathology (PALGA).

Their study population comprised 218 847 women aged 45 - 54 and 445 382 aged 30 - 44 at the time of the third negative smear test. The main outcome measures were the 10-year cumulative incidence of interval cervical cancer.

They found that 105 women developed cervical cancer within 2 595 964 woman-years at risk after the third negative result at age 30 - 44 and 42 within 1 278 532 woman-years at risk after age 45 - 54. During follow-up, both age groups had similar levels of screening. After 10 years of follow-up, the cumulative incidence rate of cervical cancer was similar: 41/100 000 (95% CI 33 - 51) in the younger group and 36/100 000 (CI 24 - 52) in the older group (p=0.48). The cumulative incidence rate of cervical intraepithelial neoplasia grade 1+ was twice as high in the younger than in the older group (p<0.001).

They concluded that the risk for cervical cancer after several negative smear results by age 50 is similar to the risk at younger ages. Even after several negative smear results, age is not a good discriminative factor for early cessation of cervical cancer screening.

Rebolj M, *et al. BMJ* 2009; 338: b1354.

BRIDGET FARHAM

Single Sutures

Worms inhibit cholera vaccine

Vaccines against cholera may not work in people who have worms. Cholera vaccines have limited success at the best of times. However, in 2000 a promising vaccine made from live, attenuated cholera bacteria protected 80% of North American of European adults who took it, but a much smaller proportion of Indonesians, with protection levels particularly low in children.

One explanation was that intestinal worms, which infect around 80% of children in developing tropical countries, might change the body's immune responses.

Scientists at the International Centre for Diarrhoeal Disease Research in Dhaka, Bangladesh and Massachusetts General Hospital in Boston examined 361 children and adults with cholera. The 53 people who had worms had far fewer antibodies to cholera in their gut, which could explain why few children in Indonesia responded to the oral cholera vaccine. It also suggests that the body's ability to fight off cholera may be lower among people with worm infections.

PLoS Negl Trop Dis 3(3): e403. doi:10.1371/journal.pntd.0000403.

Sticking plaster to treat cancer

Sticking plasters embedded with diodes could be used to treat skin cancer in combination with light-sensitive drugs. The company Polymertronics, based in Banbury, UK, is developing the plasters, which are impregnated with a series of organic light-emitting diodes (OLEDs). The light plasters are designed to be used in photodynamic therapy, in which light-sensitive drugs are applied to the skin as a cream. If a light is shined on the area, this activates the drugs, which destroy the tumour as they soak through the skin.

Currently, expensive lights and lasers supply the red light for photodynamic therapy, and so the treatment can only be performed in hospitals. The light plaster could allow people with skin cancer to treat themselves at home.

The company has shown that its OLEDs are able to destroy a range of cancer cells in the laboratory and will soon start human trials of the light-emitting plasters.

New Scientist 2009: 2 May.