



Community & Hospital Letter

Volume 28, Issue 7 February 2008

Pulmonary Hypertension

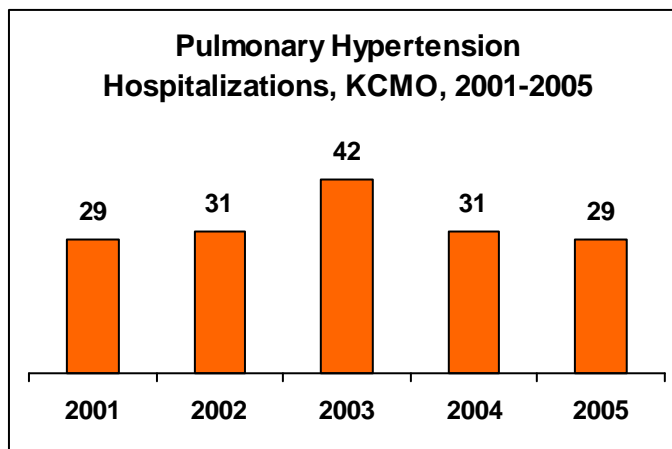
Pulmonary hypertension is considered rare among the US population. The disease occurs when there is too much resistance in arteries that carry blood to the lungs from the right side of the heart, typically in patients with heart failure, chronic obstructive pulmonary disease and pneumonia. Its pathogenesis is unclear and it can be divided into 5 distinct categories of disease entities (*Arch Intern Med* 2002;162:1925-1933). Because early symptoms (ie, difficulty in breathing and fatigue) and later manifestations (ie, reduced exercise tolerance, palpitations, fainting, swelling of the ankles or legs, chest pain, or hoarseness) are symptomatic of other diseases, prompt diagnosis and treatment can be delayed. This devastating chronic disease has a poor long term prognosis with the duration from onset of symptoms to death averaging 2.8 years. Of the drugs approved to treat pulmonary hypertension, most won approval based on symptom relief, not their power to prolong life. Primary pulmonary hypertension is the 2nd most common reason for lung transplantation, according to the United Network for Organ Sharing. As of mid-December 2007, 205 such patients were awaiting lung transplants.

According to the Centers for Disease Control and Prevention (CDC), the number of deaths in the US for which pulmonary hypertension was listed as a contributing cause increased from 10,922 in 1980 to 15,668 in 2002 (*MMWR Surveill Summ* 2005;54:SS-5). The increase occurred only among women, beginning in 1991. While the number of deaths rose among women, they declined among men and the overall age-adjusted death rate remained stable (5.2 per 100,000 population in 1980 vs 5.4 in 2002). The age-adjusted death rate for men declined from 8.2 to 5.4, while that for women increased from 3.3 to 5.5. In 2002, the age adjusted death rate for blacks was 38% higher than for whites, and non-Hispanics had an age adjusted death rate 86% higher than Hispanics. Between 2000 and 2002, 1,137 Missouri residents died with

pulmonary hypertension for an age-adjusted death rate of 6.3 (national rate was 5.4, Kansas rate was 6.0).

Between 1980 and 2002, the rate of hospitalizations of persons with pulmonary hypertension tripled with a 2-fold increase for men and a 4-fold increase for women. According to the Agency for Healthcare Research and Quality (www.ahrq.gov), between 1997 and 2007, heart disease was listed as the first diagnosis in 70% of admissions that listed pulmonary hypertension. The CDC found that heart failure was the first diagnosis for 18.7% of persons hospitalized who also had pulmonary hypertension and was followed by chronic lower respiratory disease at 12.9%.

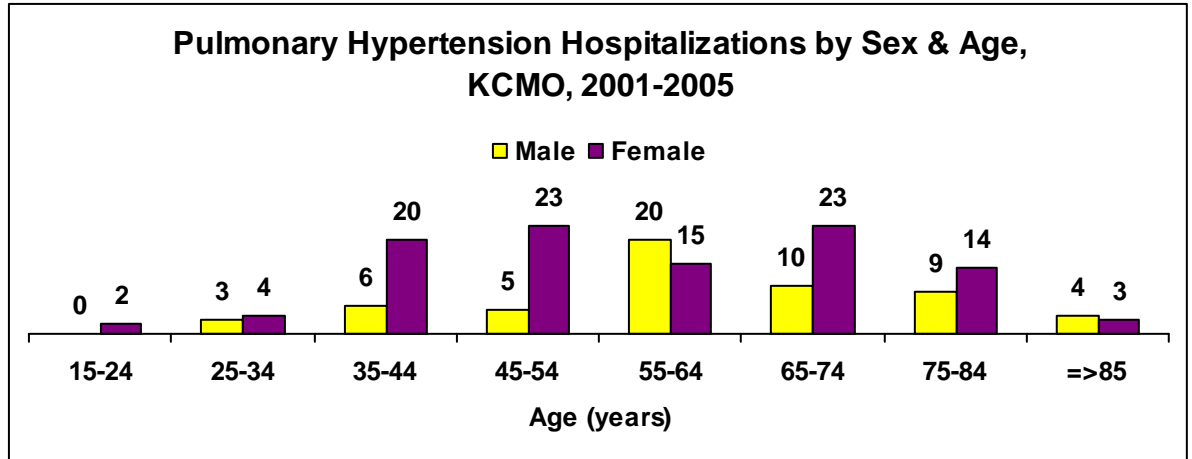
Between 2001 and 2005, there were 162 hospitalizations in Kansas City involving pulmonary hypertension (see graph below). Whites accounted for 51% of the hospitalizations, while blacks accounted for 41%. Sixty-four percent of the hospitalizations involved women. The distributions of hospitalizations with pulmonary hypertension by age show that women have higher numbers of hospitalizations at younger ages than men (see graph next page). The average age of a hospitalized person with pulmonary hypertension in Kansas City was 58 y and nation-



Community & Hospital Letter

wide it was 69 y. Nationwide, a person with pulmonary hypertension was hospitalized an average of 6.4 d at an average cost of \$12,400. In Kansas City, they were hospitalized for 6.1 d at an average hospital charge of

\$22,712. Of the persons hospitalized, 5.6% of Kansas City patients died during their hospitalization compared to 4.4% of those hospitalized across the nation (*for refer-*



ence, in Kansas City, 2.0% of persons hospitalized for any cause die during their hospitalization which is consistent with the 2.1% rate observed nationally).

Noise can Kill You

Noise is a ubiquitous problem that is intimately associated with urban living. Many communities, like Kansas City, have ordinances that attempt to keep some of the roar down to a din. Yet, according to the World Health Organization (WHO), noise is a serious health hazard as opposed to just a nuisance, and the health effect of the hazardous noise exposure is now considered to be an increasingly important public health problem. In Western Europe alone, the WHO estimates that, at a minimum, 550,100 of potential years of healthy life are lost each year through noise-related deaths or disabilities. For example, preliminary findings from WHO's Working Group on the Noise Environmental Burden of Disease project suggest that long-term exposure to traffic noise may account for 3% of deaths from ischemic heart disease, typically strokes and heart attacks. Extrapolating that Western European data to the rest of the planet, then somewhere around 210,000 ischemic heart disease deaths each year are noise-related.

Noise can cause hearing impairment, interfere with communication, interfere with learning and education, disturb sleep, cause cardiovascular and psycho-physiological effects, reduce performance, and provoke annoyance responses and changes in social behavior. The main social consequence of hearing impairment is the inability to

understand speech in normal conditions, which is considered a severe social handicap.

So how could exposure to noise have such devastating effects on human health as causing cardiovascular disease? Key to solving this puzzle is recognizing that noise can create a form of chronic stress that raises levels of stress hormones such as cortisol, adrenalin and noradrenalin. If these stress hormones are in constant circulation, they can cause long-term physiological changes that could be life-threatening. The end result can be anything from heart failure and strokes to high blood pressure and immune problems.

Noise generating sources exist in many forms from the roar of heavy traffic or railroad trains to much more subtle sources that are difficult to define as "noise pollution". These subtle sources, however, are still capable of causing anxiety and irritation. Noise can aggravate stress still more if it disturbs sleep, which can result in constant fatigue, aggressiveness, and irritability. People exposed to noise during their sleep wake up more often and fidget more in their sleep – both indicators of sleep disruption.

Citizen complaints about noise pollution are not uncommon. New York City, for example, received 354,378 noise-related complaints in 2006, up 7% from the year

before. This led to a major revision of that city’s noise codes and these changes went into effect last July. In 2007, the Kansas City Health Department received 308 complaints about noise.

In response to the growing evidence of the health effects of noise pollution, WHO has 1) developed and promoted the concept of noise management, and 2) developed community noise guidelines (published in April 1999). The guidelines also offer recommendations to communities for implementation, such as extending and enforcing ex-

isting legislation and including community noise in environmental impact assessments. Currently all European cities with populations >250,000 are required by law to have digitized noise maps showing hotspots where traffic noise and volume are greatest. Coupled with data on health effects, this should allow urban planners to better target anti-noise measures, such as rerouting of traffic and erecting noise barriers.

The information in the accompanying table comes from the WHO *Guidelines for Community Noise*.

Environment	Critical Health Effect	Sound Level dB(A)*	Time (hours)
Outdoor living areas	Annoyance	50-55	16
Indoor dwellings	Speech intelligibility	35	16
Bedrooms	Sleep disturbance	30	8
School classrooms	Disturbance of communications	35	During class
Industrial, commercial & traffic areas	Hearing impairment	70	24
Music through earphones	Hearing impairment	85	1
Ceremonies & entertainment	Hearing impairment	100	4

* The ear has different sensitivities to different frequencies, being least sensitive to extremely high and extremely low frequencies. Because of this varied sensitivity, the term “A weighting” is used: all the different frequencies, that make up the sound, are assessed to give a sound pressure level. The sound pressure level measured in decibels (dB) is referred to as “A-weighted” and expressed as dB(A).

Colon Cancer Deaths, KCMO

Colorectal cancer accounts for about 10% of all cancer deaths each year in the US. Nationally, it is the 3rd most common cancer in both men and women and the 3rd leading cause of cancer death in men and women. Colorectal cancer incidence rates have been decreasing for most of the last 2 decades. The decrease partly reflects an increase in screening which can detect and remove colorectal polyps before they progress to cancer. Yet, according to an Agency for Healthcare Research and Quality press release dated 1/11/07, only about 52% of adults report

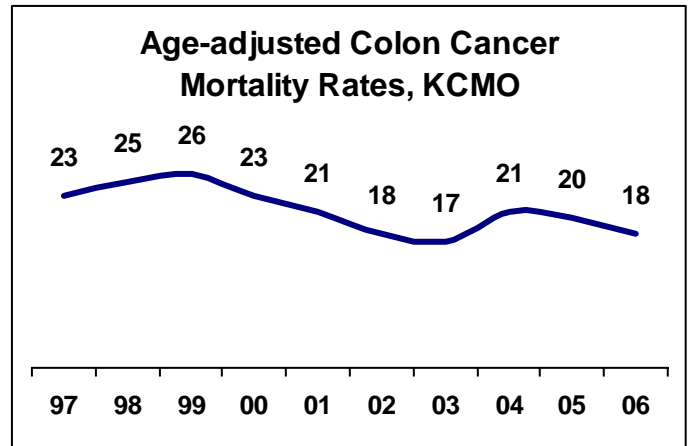
receiving recommended colorectal cancer screenings (www.ahrq.gov).

Screening is necessary to detect colon cancer in its earliest stages. Of the screening modalities, only the fecal occult blood test has been submitted to adequately designed randomized trials (*PLoS Med* 2006;3:e6). For colonoscopy, it has been reported that the first screening colonoscopy has the most impact on mortality (>50%), and subsequent colonoscopies reduce mortality even

more (*Intern Med News*, p 4, 12/1/07).

Between 1997 and 2006, 875 Kansas City residents died from colon cancer. The age-adjusted mortality rates per 100,000 population for the community are shown in the chart. The national Year 2010 objective is 13.9 deaths per 100,000 population and is clearly exceeded in Kansas City.

Ninety-seven percent of the 875 deaths occurred among non-Hispanic whites (531) and non-Hispanic blacks (303). For both groups the age-adjusted death rates have been declining, however, non-Hispanic blacks are about 60% more likely to die from colon cancer than are non-Hispanic whites. Yet, it has been reported in the literature that existing racial disparities among women in survival following diagnosis of colon cancer are non-existent after



accounting for socioeconomic factors and treatment differences (*Cancer* 2007; 109:2161-2170).

Potpourri

AN ESTIMATED 8,000-18,000 persons are hospitalized with Legionnaires disease each year in the US, and approximately 20% of these cases are associated with travel (*MMWR Morb Mortal Wkly Rep* 2007;56:1261-1263).

THE RATE OF visits to US emergency departments by senior citizens grew faster than that of any other age group between 1993 and 2003 (*Ann Emerg Med* 2007;12/5/07 epub ahead of print).

VACUUM CLEANERS KILL cat fleas just as well as any poison (*Entomol Exper Applicata* 2007;125:221-222). A standard vacuum cleaner kills 96% of adult fleas and 100% of younger fleas. The researchers suggested that the vacuum brushes wear away the flea's cuticle causing the flea to dry up and die.

PRELIMINARY BIRTH DATA for 2006 indicate that nationally there were nearly 4.3 million babies born, an increase of 3% from 2005. This was the largest single year increase in the number of births since 1989 and the largest number of births since 1961 (*Nat Vital Stat Rep* 2007; 56(7) www.cdc.gov/nchs). Accompanying this increase were increased birth rates to teenagers, an increase in births to unmarried women, a rise in C-section rates to a record 31.1% of all births, and a rise in rates of infants born prematurely and/or with low birthweight. Nearly a quarter of the births were to Hispanic women.

TRAVELERS TO BRAZIL'S forested areas are being advised by the Brazilian Ministry of Health to get yellow fever vaccinations amid a worsening outbreak of the disease. An international alert was issued on the 9th of January. The forested areas of inland Brazil cover about 75% of the country, but are well away from the tourist hot-spots of Rio de Janeiro and other coastal destinations.

Healthy People, Healthy Communities

While the City of Kansas City, Missouri makes every effort to maintain and distribute accurate information, no warranties and/or representations of any kind are made regarding information, data or services provided. In no event shall the City of Kansas City, MO, be liable in any way to the users of this data. Users of this data shall hold the City of Kansas City, MO, harmless in all matters and accounts arising from the use and/or accuracy of this data.