Asthma

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It is estimated that asthma affects between 5% to 6% of the US population, which translates to between 12 to 15 million cases per year. This reflects an increase from 34.7 in 1982 to 49.4 cases per 1000 in 1992 **(Merc)**. Asthma most commonly occurs in children under age 10 years and in males more often than females. By approximately age 30, the ratio of males to females (2:1) equalizes **(Pizzorno & Murray).** In the U.S. children under the age of 18 affected by asthma in 1982 was roughly 4%, but by 1994, this rate had increased to almost 7%, or approximately five million people under the age of 18. During this period the age-adjusted prevalence rate of asthma for people younger than 18 years old increased by 72%, thus making asthma the most prevalent chronic disease among children, and the number one reason for school absences **(US Health & Human Svsc)**. The over all increase in asthmatic disease among the U S population between 1982 and 1994 was 61% **(CDC)**. Mortality rates from asthma related causes are estimated to be about 5,000 per year which represents an increase of 45.3% since 1985 **(Amer Lung Assn).**

Asthma can be broken down into 2 categories, extrinsic and intrinsic. Extrinsic or atopic asthma is characterized by increases in mucus production and serum IgE levels and is associated with allergies. These allergies may be to pollens, grasses, environmental pollutants, foods and food additives, exogenous hormone use, second hand cigarette smoke or chemical exposure . Intrinsic asthma is characterized by a reaction of the bronchial airways in association with exposure to chemicals, exercise, emotional upset or an infection **(Derimanov GS; Oppenheimer J; Pizzorno, Murray; Merc).**

Asthma attacks can vary in intensity and severity and often present with spasm of the bronchial tubes, excessive secretion of mucus, difficulty moving air in and out of the lungs and anxiety and fearfulness. At their worst stage, they can progress to status asthmaticus, a sudden shutting down of the airways, which is a potentially life threatening condition.

Morbidity

Morbidity caused by asthma can be measured by assessing the impact of the disease upon quality of life and the amount of hospitalizations required as a result of the illness. Hospital discharge rates for asthma related disease are higher for children than adults and for blacks more so than whites, within the 5 to 34 years of age range. The impact on lost time in school for children, loss of productive work time for adults, costs

of disability, loss of self esteem, delayed development, associated depression, and related conditions is virtually immeasurable. Asthma unnecessarily reduces the quality of life for many people.

Physicians in clinical practice have noted an increase in other diseases such as chronic fatigue, heart disease, allergic rhinitis, depression and an inability to perform activities of daily living such as caring for one's self or being a productive member of society. A considerable number of these cases have an asthmatic component to them, either as a primary cause or a concomitant affliction. Additionally, diagnosis such as Attention Deficit Disorder (ADD) and Attention Deficit Hyperactive Disorder (ADHD) are found more often in patients that have asthmatic and allergic reactions.

Incidences

Despite the recent advances in diagnostic and pharmacological medicine, the incidence of asthma has continued to rise. Increases are seen among all age groups, but is predominantly increased in children, adolescents, women, elderly and the socio-economically poor. It is presently estimated that, not only in the United States, but worldwide, between 1% and 20% of children and young adults have asthma **(Lundb¨ack B, Hales S et al)** . The asthma prevalence rates for black Americans in 1992 was estimated to be just under 6%, while for whites it was 5%. The reasons for a higher percentage of blacks is thought to be due to higher reporting rates. The difference in prevalence among races may be related to differences in such things as socioeconomic status, living conditions, diet, and allergen exposures **(US HHS).**

In the elderly, one of the fastest growing populations in America, bronchial asthma is now increasingly associated with significant morbidity and mortality. This is largely due to the condition being poorly recognized by patients and physicians and thus, sub-optimally treated **(Parameswaran K et al).** Heretofore it has generally been assumed that geriatric patients are not affected by asthmatic progenitors. That the number of elderly patients is increasing suggests that the causes of asthma are increasing.

In general, these groups have the fewest resources, require longer care and management and thus require the greater amounts of medical subsidy.

Studies show that patients are largely ignorant of the causes and course of asthma. In part this is due to a paucity of education programs as well as a differing of opinions as to what constitutes the course of the disease among the various health care disciplines. It is also a reflection of a medical system which has not encouraged physician participation in patient education as to the nature of the disease. To date, political as well as economic factors influence education programs as to the causes of asthma, especially as they relate

to environmental and food allergies. Most likely to be affected by the lack of education programs are those with poorer education and reading skills. Inadequate literacy is found commonly and strongly correlates with poorer knowledge of asthma and improper medication use **(Williams MV et al)**. The combination of illiteracy, lack of education by primary care givers and an abdication of self-responsibility for self care translates to poorer compliance, higher relapse rates and greater morbidity.

Patient relapse rates following treatment for acute asthma is high, despite previous hospitalization **(Emerman CL; Cydulka RK).** They are high in part due to poor patient follow up, but primarily because of lower access to primary care physicians **(Emerman CL; Cydulka RK)** as well as difficulties with obtaining and using medications. Many of those afflicted are sent to specialists who focus on the specific disease entity rather than the whole person. While specialists treating asthma patients are needed, in conventional medicine, access is limited and generally these physicians do not focus on the many aspects which comprise the patients illness. Because of this, patients often fall through the "cracks" in the medical system because no one doctor is focusing on all of the factors which comprise the disease of asthma. In a considerable number of cases, access to even a primary care physician is limited if the person belongs to a HMO or other manage care system. Additionally, socio-economically disadvantaged patients, who do well during hospitalization, often will not follow up for long term care because of financial barriers **(Kolbe J et al).**

Quality of life

Asthma can adversely affect the physical, psychological, and social structure of persons afflicted. Females, persons from lower socioeconomic groups, and ethnic minorities experience poorer quality of life as a result of their asthma symptoms **(Schmier JK et al).**

Early asthma onset in children has been shown to have negative influences on behavioral adjustment in part related to the asthma's severity. The more severe the illness, the greater the adverse effects. Children who have an earlier onset of asthma (less than 3 years of age) show significantly more behavior problems at age 4 than children who developed asthma later **(Mrazek DA et al)**. When compared to asthma free children of comparable ages, incidences of depression, wakefulness and fearfulness are greater.

In teens afflicted with asthma, there is a lower perception of well being, a greater number of physical and emotional symptoms and a greater limitation in activities of daily living, increased wheezing and shortness of breath when compared to their well cohorts

(Forrest CB et al, Wade S et al) . This translates to greater morbidity and negative social behaviors during a time when social development and integration is occurring.

In general, the severity of emotional and psychological problems and an inability to integrate into society is higher in asthmatic children and teens. Not uncommonly, the severity of asthma in children is often perceived to be of greater consequence by their parents than by themselves **(Wamboldt MZ et al).** While caretakers of asthmatic children often possess considerable knowledge about asthma, the children themselves scored lower on hypothetical problem solving involving asthma care, indicating that a potentially dangerous or maladaptive action may follow in the event of an asthma attack **(Wade S et al).**

As a group, children and teens generally have limited asthma problem-solving skills, possess multiple asthma managers, have greater childhood adjustment problems, and experience higher levels of life stress. This pattern should raise significant concerns for this group as a whole as it indicates an increased risk for problems related to adherence to asthma management regimens and for asthma morbidity. Decreases in normal development during the "formative years" usually translates to a stifling of growth and development and late entry into adulthood.

In long-term studies of chronic asthma patients a continued decline in physical function is seen. A 15 year follow up study of chronic asthma patients demonstrated a gradual decline in respiratory capacity when related to the general population **(Lange P et al).** It is well documented that in smokers, a group who demonstrates similar characteristics to asthmatics, that lung function decreases the longer the exposure. The costs associated with disease from smoking are well documented.

Occupational induced asthma makes up a large proportion of new cases in previously well adults, with the incidence of clinically significant, new-onset asthma being 1.3/1,000, and increasing to 3.7/1,000 when cases with reactivation of previously quiescent asthma were included **(Milton DK et al)** . Occupational induced asthma shows an increased risk of disability and less likelihood of being unable to return to meaningful employment in severe cases. **(Gassert TH et al)** Women were the most likely to be afflicted. This occurred despite removal from the offending environment which suggests that the illness continues to progress once the cause is removed.

Asthma Mortality

In 1995, more than 5000 Americans died from asthma. Deaths from asthma have been increasing in the United States as well as worldwide**.** A review of asthma related deaths showed the most common characteristics of deceased to be inner-city residence,

single, black males, age 15 to 54 years old with a history of asthma and no other significant medical condition **(Weitzman JB et al).** Exclusive of this group, in people 5 to 34 years old, asthma is most accurately identified as a cause of death. Asthma mortality rates have risen markedly since 1979 (blacks 132% and whites 179%), but the specific causes of the increase have eluded researchers.

Worldwide, asthma mortality is increasing in many, but not all, parts of the world. Asthma mortality rates in people between the ages of 5 and 34 are found to be higher in Australia, England and Wales, West Germany, Japan, Canada, and the U.S.. Of these industrialized countries, the mortality rate is the lowest in the U.S..

Costs

The direct costs of asthma include the costs of asthma management programs, inpatient and outpatient medical care, physician services, emergency visits, ambulance use, drugs, short-term and long-term treatment complications, medical devices, nursing services, allergy testing, and research. Some of the indirect costs of asthma include absence from work and school, travel, time waiting for care and, at its most extreme, death. Costs most difficult to measure are the fear and anxiety, pain, suffering, delayed social development and decreased potential resulting from school absenteeism **(US HHS).**

It is estimated that Americans will spend 14.5 billion dollars per year on health care for the control of asthma symptoms alone. This is an increase over the 6.2 billion dollars spent in 1990 and these costs can be expected to rise as the number of cases increases and the population ages. Indirect financial loss to individuals affected by asthma are estimated to be about 1 billion dollars in lost wages for parents who stayed home with sick children, 1 billion dollars in medication, and 850 million dollars in lost wages of adult sufferers. Typical patient charges for asthma related hospitalization are estimated to be $7,255.00 per year with most of the costs being absorbed through federal and state government related programs **(Ill State report).**

Most of the money being spent is in hospitals and emergency rooms where services are expensive and do not address long-term reduction of symptoms, disease management or preventive measures. Appropriate management of asthmatic patients has shown to decrease the overall cost of the disease to society. Its most important benefit would be the improved health and well being of people with asthma and their families.

Clinical experience suggests that even the most advanced medications now available will loose their effectiveness over time and that new treatment regimens must be created to take their place. Thus, a considerable portion of the 14.5 billion dollars spent per year are channeled into research on asthma. While research is important, most

of it focuses on new drug development which do little except to palliate symptoms while leaving the underlying disease intact.

Holistic medicine practitioners focus on the underlying cause of the disease rather than just controlling symptoms, therefore allowing for the containment of symptoms and the eventual cure of the asthmatic patient. The long-term benefits both economically, socially as well as to the patient should be obvious.

Integrated Care

What constitutes integrated care for the asthma patient is open to some debate. Management of asthma related disease has largely fallen on federal, state and local programs which coordinate the numerous agencies concerned with it. But it is the responsibility of society as a whole as well as government agencies to deal with the multifactorial causes. To date, considerable funding has gone into federal, state and local programs for the management of asthma. Yet despite this, the levels and morbidity and mortality associated with this disease have increased. Many patient education programs are carried out at the health institution level while very little occurs through local communities, or most effectively, one-on-one as the patient is being treated. While the majority of physicians seeing asthma patients in one study were general practice physicians **(Davis, PA et al)**, and physicians in general are the patient's primary source of information, fewer patients receive information and education from their doctors. This may take the form of a discussion during examination or summary of findings, or through literature, graphics, informational videos or computer programs.

In general practice characteristics between MD and non-MD asthma care providers differ very little with regard to the treatment of asthma. Both groups identify dietary and nutritional approaches as their most prevalent and useful asthma treatment option **(Davis, PA et al)**. However, non-MD's such as naturopathic physicians are more likely to implement dietary changes than MD's, in part due to better training in clinical nutrition.

Many suggested treatment guidelines indicate that patient education is one of the main components of asthma management **(Boulet LP)**. In the experience of many physicians, patients who become actively involved in their own care generally do better with their respective illnesses.

The most effective programs are recognized to be those which integrate asthma care and provide patient education aimed at improving self-management skills. Improving self-management skills involves the patient in their own care rather than making them dependent upon outside sources. This has been found to be particularly

effective when offered to asthmatic patients with high morbidity. Because of the advances in knowledge regarding asthma, and the experience of many physicians who utilize an integrated approach to the treatment of asthma "there appears to be no reason that informed physicians cannot play an important role in reversing recent trends of rising asthma morbidity and mortality **(Keenan JM).**"

Alternative & Complementary Medicine Therapeutics

What is termed today alternative and complementary medicine has had a long and distinguished track record in the treatment of asthma. That the natural therapeutic regimens utilized are not recognized by conventional medicine is not a function of their inefficiency or efficacy, but rather its dependence upon diagnostic procedures, surgery and pharmaceuticals. Many of the pharmaceutical agents of today are derivatives of plant medicines still utilized by many medical practitioners. In fact, in many countries, herbal and homeopathic medicines are the medicines of choice for the treatment of asthma. Additionally, that conventional medicine continues to express a concern about the safety and effectiveness of alternative and complementary medicine therapies, is more a function of its lack of education and clinical experience as to their efficacy.

A considerable number of patients treat asthma with home medicines, many of which have been shown to be effective for short term management **(Hung OL et al; Blanc PD et al; Bielory L & Lupoli K).** Women are more likely to utilize natural treatments, and among ethnic groups, Asians have the highest utilization rate of herbal and natural therapies **(Hung OL et al).** Not surprisingly, incidences of asthma among Asian Americans is one of the lowest.

Results of studies **(Bielory L & Lupoli K; Francis, D)** show positive effects of herbal medicines on broncho-dilation, pulmonary function tests, and antagonism of asthma mediators such as histamine and platelet activating factor, corticosteroid levels, and clearance of mucus. The biochemical pathways elucidated by drug research are affected by herbal medicines in many of the same ways but without the side effects. A review study of botanical medicines concluded that many medicinal plants provided relief of symptoms equal to drug therapy **(Bielory L & Lupoli K).** Most importantly, the costs associated with herbal medicines are considerably less than prescription drug regimens.

Food allergy has also been related to the development of asthma as well as its treatment **(Marz).** Foods such as wheat, dairy, eggs, chocolate, shellfish and those high in preservatives and dyes are found to be common inducers of asthma, especially in

children. Other foods have a positive effect upon asthmatic patients, lessening symptoms by acting to stabilize mast cells and histamine production. Additionally, Vitamins B_{12} and B_6 therapy **(Simon, SW; Collip et al)** has proven effective in controlling symptoms and reducing corticosteriod usage.

Other vitamin and mineral therapies have been shown to be effective in the prevention and treatment of asthma. Among them are beta carotene, quercetin, selenium, vitamin E, vitamin C, magnesium and Omega 3/6 fatty acids **(Marz, Pizzorno & Murray).** When used in conjunction with a healthy diet, vitamin and mineral therapy often will provide considerable symptom relief and improve over-all health.

Hypnotherapy has also been shown to be of benefit in helping students with asthma, in part because it focuses upon the whole person rather than just the disease entity **(Watters KH),** while working with them to better self manage symptoms.

The homeopathic treatment of asthma has provided excellent relief from acute as well as chronic symptomology. The clinical experience of practitioners as reported in numerous case studies shows the short as well as long term effectiveness of this therapy. Although homeopathic medicine is less well known in the U.S., it is very popular throughout the world, especially Europe. Approximately 40% of French physicians and 20% of German physicians prescribe homeopathic medicines. Over 40% of British physicians refer patients to homeopaths, and almost 50% of Dutch physicians consider these natural medicines to be effective **(Ullman).**

New research on the homeopathic treatment of asthma published in The Lancet (December 10, 1994) suggests that relief is in sight for asthma sufferers. The study conducted by professors at the University of Glasgow indicates that those patients given an exceedingly small homeopathic dose of whatever substance to which they are most allergic can provide significant relief within the first week of treatment. Termed "homeopathic immunotherapy", this unique method of individualizing medicines showed that over 80% of patients given a homeopathic remedy improved, while only 38% of patients given a placebo experienced a similar degree of relief **(Reilly D).** When compared to placebo, the effects of the homeopathic medicines are found to be statistically significant **(Reilly D, et al).** Similar findings that homeopathy has a significant effect on patient's health were reported in a recent meta-analysis of homeopathic studies **(Linde K.).**

Additional data provided by Dutch researchers, none of whom were homeopaths, reviewed 107 studies in the British Medical Journal, 81 of which showed that homeopathic medicines worked. While most of the experiments had one or more flaws, 22 studies were considered of a high caliber, and 15 of them showed efficacy of the homeopathic medicines. The researchers concluded, "The amount of positive evidence

came as a surprise to us. The evidence presented in this review would probably be sufficient for establishing homeopathy as a regular treatment for certain indications **(Kleinjen, J, at al).**"

Prevention is often over looked by a conventional medicine system which focuses primarily on disease management. That the focus of treatment of asthma is on management and not prevention, has placed a greater burden upon an already over worked medical system and will continue to do so as the number of cases rise. Gassert and associates concluded that, "greater efforts at primary and secondary prevention should lessen the burden of long-term illness and unemployment due to occupational asthma **(Gassert TH et al).**" Similar efforts would show effects with environmentally, allergic and chemically induced asthma as well.

Preventive measures in conventional medicine are largely lacking due to a philosophy of disease management and symptom control. Yet, public health measures aimed at improving sanitation are largely preventive measures and have significantly improved the quality and length of life. A new emphasis on prevention and health enhancement, an approach largely promoted by complementary and alternative medical practitioners, would produce significant savings for the treatment of asthma.

Clinically the greater majority of asthma cases can be treated with natural medicines. A common therapeutic regimen includes diet and nutrition, exercise, botanical medicines, homeopathic medicines, acupuncture, vitamin therapy, hydrotherapy, education as to the nature of the disease and preventive measures. Natural medicine therapeutics are more adaptable to individual patient requirements, and for that reason, much more effective. Relatively few cases need actual drug therapy, and those who are in an "asthmatic crises" also respond well to natural therapeutics. However, that modern drug therapy is available for the few cases unresponsive to natural treatments provides optimal medical care for asthmatic patients.

That the public utilizes natural therapies at a higher rate than ever before lends credence to its safety and efficacy. It is not unusual, and in fact is often the rule, that patients will turn to "home remedies" for the treatment of asthma before seeking medical attention. Many of these therapies such as exposure to onions and garlic, increasing hydrochloric acid and giving red pepper have been proven to be effective when subjected to clinical trials **(Dorsch W et al; Bray, G; Pizzorno & Murray; Lundberg, J et al).**

Research Funding

The types of studies which congress could fund are many and varied. In the holistic model, placebo controlled, double blind studies are often difficult to conduct because of the eclectic nature of natural therapies. Rather than focusing upon a single biochemical pathway, natural medicines work by utilizing many of the inherent physiological defense mechanisms the human body has evolved. Natural therapies actually lend themselves better to outcomes studies, performed on patients who act as their own controls. These types of studies, using existing therapeutic protocols, begin to show results sooner than conventional models. Outcome studies would not only focus on patient care at the clinic level, but would also be more cost effective because they focus on patient care rather than drug response. Additionally, outcomes protocols are more adaptable to individualization than double blind placebo controlled studies, thus allowing for greater patient compliance.

A paradigm shift regarding how we view human disease and the outcome of therapy is occurring. The scientific model developed during the early part of this century has served us well and will continue to do so for selected protocols. However, like all "systems" conventional medical therapy has its limitations, and in the case of asthma therapeutics, seems to have reached its most effective level. This is because, despite the large increases in research funding, the incidences of asthma and asthma related disease have continued to rise.

The holistic model which views the person as a complete being rather than as a single disease entity, allows for a wide range of therapeutic possibilities. A review of the validity and efficacy of alternative medicine therapeutics, which includes naturopathic medicine, concluded that it is "such an important factor in health care in the Netherlands, both from a qualitative and quantitative point of view, that government policy cannot disregard it. **(Oojendijk W, et al)** ." The experience of governmental agencies, insurance companies and patients are that natural therapies are more cost effective and provide greater patient benefit **(Bergner)**. In general, patients see their naturopathic physicians less often per year than their MD counterparts while not adding to costs of insurance premiums **(Bergner, Hawaii)**. A study published in the Journal of the American Medical Association suggests that medical costs could be reduced by 20% through elimination of unnecessary medical procedures **(Gleicher, N)**. This alone would save approximately 2.9 billion dollars per year and it is estimated that the savings would be greater if alternative therapies and a holistic and preventive approach were taken.

The complexities of asthma require a long term solution which can only be achieved by building coalitions and partnerships among the many health care disciplines and federal and state agencies. Support for local programs and multidisciplinary health

care settings should be available from federal organizations such the National Institutes of Health, the Centers for Disease Control and Prevention, Food and Drug Administration and the Environmental Protection Agency. Both national and state agencies can help support local coalitions with start-up grants, educational support, and funding for scientific research and outcomes studies for alternative therapies. Support from these agencies must also begin to include alternative and complementary medical therapies and practitioners in order to stem the growing tide of asthma morbidity and mortality.

Public and patient education regarding asthma, and what constitutes its causes and treatments have been shown to reduce its morbidity and mortality. Ensuring that people with asthma are knowledgeable about their disease and empowered to demand appropriate management options is a role of the public health system as well as individual; health care practitioners.

Natural medicine protocols for the treatment of asthma as well as other diseases have long been a part of the American health care system. The effectiveness of natural therapeutics has been proven both clinically and in studies and therefore have much to contribute to the health care of the US..

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