Scanning the Literature

Pediatric Reviews by Daniel Bronfin, MD
Family Medicine Reviews by Paul Marquis, MD
Ophthalmology Reviews by Richard Selser, MD

Do Parents Expect Antibiotics for the Common Cold?

Mangione-Smith R, McGlynn EA, Elliot MN, et al.
The relationship between perceived parental expectations and pediatrician antimicrobial prescribing behavior.
Pediatrics 1999; 103:711-718.

Context: Despite growing concern over the escalating antimicrobial resistance problem, physicians continue to inappropriately prescribe. It has been suggested that a major determinant of pediatrician antimicrobial prescribing behavior is the parental expectation that a prescription will be provided.

Objectives: To explore the extent to which parental previsit expectations and physician perceptions of those expectations are associated with inappropriate antimicrobial prescribing; and to explore the relationship between fulfillment of expectations and parental visit-specific satisfaction.

Design: Previsit and postvisit survey of parents and postvisit survey of physicians.

Setting: Two private pediatric practices, one community based and one university based.

Participants: Ten physicians (response rate = 77%), and a consecutive sample of 306 eligible parents (response rate = 86%) who were attending sick visits for their children between October 1996 and March 1997. Parents were screened for eligibility in the waiting rooms of the two practices and were invited to participate if they spoke and read English and their child was 2 to 10 years old, had a presenting complaint of ear pain, throat pain, cough, or congestion, was off antimicrobial therapy for the past 2 weeks, and was seeing one of the participating physicians.

Main Outcome Measures: Antimicrobial prescribing decision, probability of assigning a bacterial diagnosis, and parental visit-specific satisfaction.

Results: Based on multivariate analysis, physicians' perceptions of parental expectations for antimicrobials was the only significant predictor of prescribing antimicrobials for conditions of presumed viral etiology; when physicians thought a parent wanted an antimicrobial, they prescribed them 62% of the time versus 7% of the time when they did not think the parent wanted antimicrobials. However, physician antimicrobial prescribing behavior was not associated with actual parental expectations for receiving antimicrobials. In addition, when physicians thought the parent wanted an antimicrobial, they were also significantly more likely to give a bacterial diagnosis (70% of the time versus 31% of the time). Failure to meet parental expectations regarding communication events during the visit was the only significant predictor of parental satisfaction. Failure to provide expected antimicrobials did not affect satisfaction.

Conclusions: The antibiotic resistance epidemic should lead to immediate replication of this study in a larger more generalizable population. If inaccurate physician perceptions of parent desires for antimicrobials for viral infections are confirmed, then an intervention to change the way physicians acquire this set of perceptions should be undertaken.

Comments:

The average child has four to eight colds per year. It has been estimated that three out of four upper respiratory tract infections (URIs) in young children are uncomplicated, self-limited viral illnesses that do not require antimicrobials. Despite this fact, nearly half of all children with URIs leave their doctor's office with an antimicrobial prescription. Epidemiological studies have shown that the frequent use of antibiotics has led to the increase in drug resistance among common bacterial pathogens, particularly in day care settings, and the unnecessary use of limited healthcare resources.

One of the most commonly cited reasons for prescribing antibiotics in the absence of bacterial infection ("inappropriate prescribing") by pediatricians and family physicians is the attempt to satisfy perceived parental expectations. This study confirmed

that physicians were more likely to use a bacterial diagnosis such as sinusitis or otitis media, and to inappropriately prescribe, when they thought the parent desired an antibiotic. Interestingly, there was very poor correlation between the parent's previsit expectations and the physician-perceived expectations for an antibiotic. In this study, parental satisfaction was most closely related to the doctor's communication skills *independent* of the receipt of an antimicrobial prescription.

Our desire to please our patients may extend to the inappropriate prescribing of antibiotics for viral illnesses, and this study alerts us to the fact that in many cases this is not the expectation of the parent. It is correct to assume that parents demand something when they come to see us; however, when dealing with presumed viral illnesses, education, rather than an antibiotic, should be our prescription.

Domestic Abuse Alert

Siegel RM, Hill TD, Henderson VA, et al. Screening for domestic violence in the community pediatric setting. Pediatrics 1999; 104:874-877.

Objective: Children exposed to domestic violence (DV) can experience a variety of adverse effects such as behavior disorders, developmental delay, and child abuse. Recently, the American Academy of Pediatrics recommended that all pediatricians incorporate screening for DV as a part of anticipatory guidance. To date, however, there is little information on how likely women are to disclose DV or whether there are any benefits to screening in the pediatric office setting. The purpose of our pilot study was to gain an understanding of whether screening for DV in the pediatric office setting could be helpful to abused women and their children.

Methods: During a 3-month period, 92% of the women who accompanied their children for a well-child visit to a hospital-based suburban pediatrician were asked about violence in the home with a six-question screening tool.

Results: Of the 154 women screened, 47 (31%) revealed DV at some time in their lives. Twenty-five women (17%) reported DV within the past 2 years and were reported to the mandated state agency. There were 5 episodes of child abuse reported of which two had not been previously reported. Interestingly, there were 5 women injured during their most recent pregnancy and who had separated from their abusive partner, but no legal action had been taken to protect them from their partner's return. There was no significant difference in the incidence of DV reported in families with Medicaid (37%) versus private insurance (20%). Before routine DV screening in our office, only one previous DV report had been made in 4 years.

Conclusions: Our preliminary results suggest that many women will reveal DV when screened in the pediatric office setting. Also, there is a subgroup of women, those with young children who have recently separated from their partners, who may particularly benefit from DV screening.

Comments:

Domestic violence (DV) is a pediatric issue. The AMA has estimated that over 2 million women are assaulted by their male partners each year. Intervention is critical because children whose mothers are assaulted will also become victims in 33% to 77% of households. The fact is that witnessing violence in the home can be as traumatic for children as direct physical violence. Although women rarely will present to their pediatrician or family physician with this complaint, they may give clues to DV such as facial trauma, anxiety/depression, poor compliance with appointments, and recurring visits for seemingly trivial concerns.

This study cited time pressure, lack of adequate knowledge in screening for DV, and fear of opening 'Pandora's box' as reasons for lack of inclusion of this topic in routine well-child visits. These authors asked female guardians who accompanied their children alone questions including:

1. Are you in a relationship in which you have been harmed or felt afraid of your partner?
2. Has your partner ever hurt any of your children?
3. Are you afraid of your current partner?

Those who answered in the affirmative were referred to a social worker for a more in-depth interview. The fact that 31% of the women in this socially diverse practice were found to be victims of DV alerts us to the pervasiveness of this problem while also demonstrating that all socioeconomic classes are at risk. Special attention to pregnant women is warranted since this is known to be a particularly high-risk population. An unanswered question from this study focuses on the ultimate benefit to families from screening.

Primary care physicians in our region need to be on heightened alert in that Louisiana ranks first in the nation in women killed by men. Identifying and intervening on behalf of battered women is clearly one of the most effective ways of preventing child abuse.

Is There a Better Alternative to the Nebulizer for Childhood Asthma?

Schuh S, Johnson DW, Stephens D, et al. Comparison of albuterol delivered by a metered dose inhaler with spacer versus a nebulizer in children with mild acute asthma. J Pediatr 1999; 135:22-27.

Objective: In children with mild acute asthma, to compare treatment with a single dose of albuterol delivered by a metered dose inhaler (MDI) with a spacer in either a weight-adjusted high dose or a standard low-dose regimen with delivery by a nebulizer.

Study Design: In this randomized double-blind trial set in an emergency department, 90 children between 5 and 17 years of age with a baseline forced expiratory volume in 1 second (FEV1) between 50% and 79% of predicted value were treated with a single dose of albuterol, either 6 to 10 puffs (n = 30) or 2 puffs (n = 30) with an MDI with spacer or 0.15 mg/kg with a nebulizer (n = 30).

Results: No significant differences were seen between treatment groups in the degree of improvement in percent predicted FEV1 (P =.12), clinical score, respiratory rate, or O2 saturation. However, the nebulizer group had a significantly greater change in heart rate (P =.0001). Our study had 93% power to detect a mean difference in percent predicted FEV1 of 8 between the treatment groups.

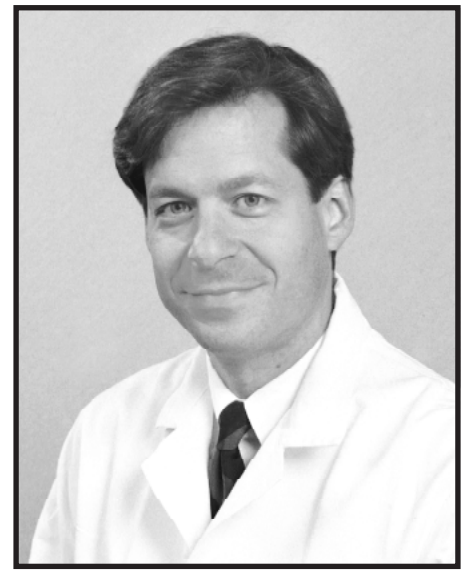
Conclusion: In children with mild acute asthma, treatment with 2 puffs of albuterol by an MDI with spacer is just as clinically beneficial as treatment with higher doses delivered by an MDI or by a nebulizer.

Comments:

There is a general sense among clinicians that small-volume nebulizers are superior for the aerosolized administration of β agonists compared with pressurized metered-dose inhalers with valved holding chambers (pMDI + VHC). This study focused on children with mild to moderate asthma and found that use of the pMDI + VHC with standard doses of albuterol was equivalent to a standard nebulized dose with fewer side effects. The use of the VHC also results in 80% to 90% less oropharyngeal deposition of bronchodilators, which reduces the systemic side effects and targets the lower respiratory tract. These facts, along with the obvious advantages of the pMDI + VHC (namely, the lower device and drug costs, the increased portability and independence from a power source, and the more rapid administration), has persuaded many of us to change our approach to the wheezing child.

An accompanying editorial summarizes a number of articles that demonstrate that this approach is also therapeutically equivalent with fewer side effects for patients with severe, life-threatening asthma.

Advances in aerosol technology have allowed clinicians to avoid the use of albuterol syrup by mouth, which left many children, and their distraught parents, bouncing off the walls. Even in infants, the pMDI + VHC can be effectively used with normal tidal-breathing (and crying) with the attachment of an appropriately sized mask. It is also clear that the pMDI + VHC is superior to the nebulizer in the delivery of corticosteroids because of the lower systemic absorption. We encourage our patients to bring their pMDI + VHC into clinic or the Emergency Department when ill; in doing so, we can review their technique and reduce the risk of spreading infection with contaminated nebulizers.



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CT Scans Help Appendicitis Diagnosis

Pena BMG, Taylor GA, Lund DP, Mandl KD. Effect of computed tomography on patient management and costs in children with suspected appendicitis.
Pediatrics 1999; 104:440-446.

Objective: Children evaluated in the emergency department for possible appendicitis are often admitted for observation, despite the widespread availability of accurate diagnostic studies, particularly computed tomography (CT). We sought to establish effective and efficient strategies for using CT to diagnose and manage children with possible appendicitis.

Design: Retrospective chart review and decision analysis.

Setting: Emergency department of a large, urban tertiary care pediatric teaching hospital.

Patients: All patients admitted from January 1996 to August 1997 for suspected appendicitis.

Method of Analysis: Three modeled strategies were empirically applied to the retrospective cohort of patients admitted for observation. Outcomes and costs under the modeled strategies were compared with those under current practice. The three strategies were: 1) to obtain CT scans on all patients and discharge those with normal findings; 2) to obtain CT scans and admit all patients; 3) to selectively obtain CT scans on those patients with a peripheral white blood cell count >10 000/mm^3 (10 x 10^9/L) and admit all. The sensitivity and specificity of CT for diagnosing appendicitis were determined empirically from the data. A sensitivity analysis was performed.

Main Outcome Measures: The number of preoperative inpatient observation days, total hospital costs, and the rates of both missed appendicitis and negative laparotomies.

Results: Of 609 patients hospitalized for possible appendicitis, 287 went directly to the operating room and 14 patients had known perforation and abscess. Three hundred eight children were observed and comprised the study cohort. Of the cohort, 112 (36.4%) underwent appendectomy and 26 (23.2%) of these had a normal appendix at pathology. Three patients were discharged from the hospital after observation and were subsequently readmitted with appendicitis (missed appendicitis). Among the 75 patients who had CT performed, the sensitivity and specificity of CT were both 97%. Under the current practice strategy, the cohort collectively accumulated 487 inpatient observation days and incurred a per patient cost of $5831. All three CT strategies would have reduced the total number of inpatient observation days, operations, negative laparotomies, as well as the per patient cost. The strategy of obtaining CT scans on all patients and then admitting them had the lowest rate of missed appendicitis. The additional cost of preventing each case of missed appendicitis under this strategy compared with the strategy of obtaining CT scans and sending home those with negative findings was $150,304. Even at the lowest reported sensitivity and specificity of CT in the literature, the ordering of the three strategies remained constant and continued to reduce total cost per patient.

Conclusion: Compared with current practice, diagnostic strategies using CT could reduce costs and improve diagnosis, management, and outcomes for children with appendicitis.

Comments:

The use of CT scanning for suspected appendicitis is cost effective. Of greater interest is the extremely high sensitivity and specificity of CT scanning in a population of children with right lower quadrant pain and associated findings suggestive but not classic for appendicitis. This has always been a difficult diagnosis even for experienced surgeons. CT scanning promises to reduce both missed diagnoses and negative laparotomies and will likely be the standard diagnostic modality for suspected appendicitis.

Lung Cancer Screening?

Henschke CI, McCauley DI, Yankelevitz DF, et al. Early lung cancer action project: overall design and findings from baseline screening.
Lancet 1999; 354:99-105.

Background: The Early Lung Cancer Action Project (ELCAP) is designed to evaluate baseline and annual repeat screening by low-radiation-dose computed tomography (low-dose CT) in people at high risk of lung cancer. We report the baseline experience.

Methods: ELCAP has enrolled 1000 symptom-free volunteers, aged 60 years or older, with at least 10 pack-years of cigarette smoking and no previous cancer, who were medically fit to undergo thoracic surgery. After a structured interview and informed consent, chest radiographs and low-dose CT were done for each participant. The diagnostic investigation of screen-detected non-calcified pulmonary nodules was guided by ELCAP recommendations, which included short-term high-resolution CT follow-up for the smallest non-calcified nodules.
Findings: Non-calcified nodules were detected in 233 (23% [95% CI 21-26]) participants by low-dose CT at baseline, compared with 68 (7% [5-9]) by chest radiography. Malignant disease was detected in 27 (2.7% [1.8-3.8]) by CT and seven (0.7% [0.3-1.3]) by chest radiography, and stage I malignant disease in 23 (2.3% [1.5-3.3]) and four (0.4% [0.1-0.9]), respectively. Of the 27 CT-detected cancers, 26 were resectable. Biopsies were done on 28 of the 233 participants with non-calcified nodules; 27 had malignant non-calcified nodules and one had a benign nodule. Another three individuals underwent biopsy against the ELCAP recommendations; all had benign non-calcified nodules. No participant had thoracotomy for a benign nodule.
Interpretation: Low-dose CT can greatly improve the likelihood of detection of small non-calcified nodules, and thus of lung cancer at an earlier and potentially more curable stage. Although false-positive CT results are common, they can be managed with little use of invasive diagnostic procedures.

Comments:

Lung cancer is the leading cause of cancer death in the United States. Resected stage I cancer has a 5-year survival of 70% compared with an overall 5-year survival rate of 12% for lung cancer. Because of the close association between lung cancer and cigarette smoking, high-risk patients are easy to identify. All of these factors would suggest that lung cancer would lend itself to screening programs.

Unfortunately, previous trials of screening for lung cancer failed to show a beneficial effect on mortality. These trials depended upon periodic chest radiographs and sputum cytology. These investigators present the findings of baseline screening of high-risk patients using the technology of low-dose CT scanning. This initial report is encouraging with 19 stage I malignancies detected that were not visible on chest X-ray. Follow-up is needed to ensure that these encouraging baseline findings will result in decreased mortality and not simply reflect a lead time bias.

Preventive Medicine: Cheaper Than a Car

Filak AT Jr, Ricer JS, Ricer RE. Lifetime costs for preventive medical services.
J Fam Pract 1999; 48:706-710.

Background: Cost effectiveness and other issues relating to preventive health services have been widely discussed, but a computer search of the literature elicited no reports in which the lifetime cost of a patient's preventive services was calculated. The purpose of our study was to calculate the total lifetime cost of preventive medical services for idealized versions of male and female patients.
Methods: We used the preventive screening recommendations of the US Preventive Services Task Force as our standard. We developed a model using idealized patients who were asymptomatic, had no risk factors, and lived healthful lifestyles. We determined the typical charges in a specified marketplace for the office visits, procedures, laboratory tests, and purchases required to comply with the screening recommendations.
Results: Lifetime charges ranged from $5432.60 to $7529.60 for men and from $15,307.10 to $18,525.10 for women.
Conclusions: Knowledge of the lifetime costs of preventive services may influence the decisions of patients, physicians, and insurance plans when purchasing or providing these services.

Comments:

The US Preventive Services Task Force Guide to Clinical Preventive Services implements an evidence based approach in evaluating preventive services. Preventive services recommended by this task force include well-child visits, prenatal visits, annual visits after 50 years of age, vaccinations, mammography, Pap smears, sigmoidoscopies, etc. It is a quite inclusive list of preventive services.

It is interesting that the cost for preventive services over the lifetime of a woman is approximately 3 times that of a man. This may account for some of the increased interest in health care expenditures that women exhibit and their increased importance as health services consumers compared with men. It is noted in the article that the gender difference in costs is entirely due to prenatal costs and the longevity of women. I found it of note as well that the total lifetime cost for preventive medical services for a patient is less than the cost of a compact car.

Obesity: A National Problem

Calle EE, Thun MJ, Petrelli JM, et al. Body-mass index and mortality in a prospective cohort of U.S. adults. New Engl J Med 341:1097-1105.

Background: Body-mass index (the weight in kilograms divided by the square of the height in meters) is known to be associated with overall mortality. We investigated the effects of age, race, sex, smoking status, and history of disease on the relation between body-mass index and mortality.

Methods: In a prospective study of more than 1 million adults in the United States (457,785 men and 588,369 women), 201,622 deaths occurred during 14 years of follow-up. We examined the relation between body-mass index and the risk of death from all causes in four subgroups categorized according to smoking status and history of disease. In healthy people who had never smoked, we further examined whether the relation varied according to race, cause of death, or age. The relative risk was used to assess the relation between mortality and body-mass index.

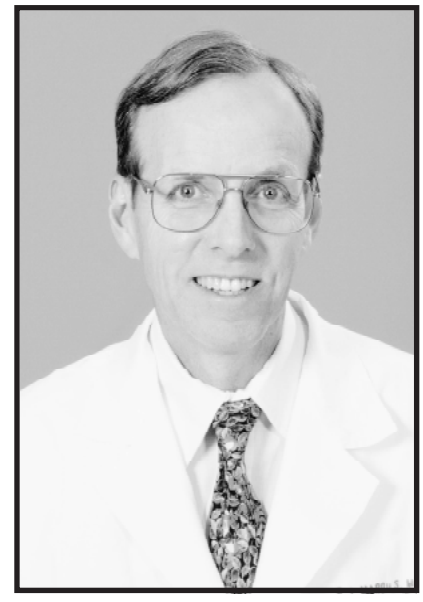
Results: The association between body-mass index and the risk of death was substantially modified by smoking status and the presence of disease. In healthy people who had never smoked, the nadir of the curve for body-mass index and mortality was found at a body-mass index of 23.5 to 24.9 in men and 22.0 to 23.4 in women. Among subjects with the highest body-mass indexes, white men and women had a relative risk of death of 2.58 and 2.00, respectively, as compared with those with a body-mass index of 23.5 to 24.9. Black men and women with the highest body-mass indexes had much lower risks of death (1.35 and 1.21), which did not differ significantly from 1.00. A high body-mass index was most predictive of death from cardiovascular disease, especially in men (relative risk, 2.90; 95 percent confidence interval, 2.37 to 3.56). Heavier men and women in all age groups had an increased risk of death.

Conclusions: The risk of death from all causes, cardiovascular disease, cancer, or other diseases increases throughout the range of moderate and severe overweight for both men and women in all age groups. The risk associated with a high body-mass index is greater for whites than for blacks.

Comments:

This report correlates body-mass and mortality for a cohort of more than 1 million adults followed from 1982 to 1996 using data from the American Cancer Society. The adults with a body-mass index of 30 or more (>174 lb. for 5' 4" woman and >208 lb. for 5'10" man) had roughly 50% to 100% higher mortality than those adults with a body-mass index of 25 (145 lb. for 5'14" woman and 174 lb. for 5'10" man). Approximately 20% of the adults in this cohort had a BMI >30. A high body-mass index increased the risk for both cancer death and cardiovascular death but was most predictive of death from cardiovascular disease. The risk associated with a high body-mass index is significantly less for blacks than whites.

Once again, a large study confirms obesity as a major public health problem. An accompanying editorial notes the relative failure of individual interventions to treat or prevent obesity. The editorial suggests a variety of public health initiatives to improve diets and increase the activity level for the general population as a more hopeful approach to this national health problem.



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Can Monotherapy for Eye Infections Still Be Trusted?

Goldstein MH, Kowalski RP, Gordan YJ. Emerging fluoroquinolone resistance in bacterial keratitis. Ophthalmology 1999; 106:1313-1318.

Objective: To identify resistance patterns to the fluoroquinolones for patients with bacterial keratitis.
Design: Retrospective observational case series.
Participants: All cases of bacterial keratitis presenting to the Charles I. Campbell Ophthalmic Microbiology Laboratory at the Eye and Ear Institute of Pittsburgh from January 1993 to December 1997 were reviewed. A total of 1053 ocular isolates from 825 cases of bacterial keratitis were identified.
Main Outcome Measures: In vitro laboratory susceptibility testing of ocular isolates to ciprofloxacin and ofloxacin was determined by the Kirby-Bauer disk diffusion method and interpreted using the National Committee for Clinical Laboratory Standards serum standards.
Results: The number of cases of bacterial keratitis per year decreased from 284 in 1993 to 75 in 1997. The ratio of gram-positive to gram-negative organisms changed from 81.8%:18.2% in 1993 to 51.4%:48.6% in 1997 (chi-square 66.00; degrees of freedom, 4; P <0.000001). Resistance of *Staphylococcus aureus* to ciprofloxacin significantly increased annually from 5.8% in 1993 to 35.0% In 1997 (chi-square, 19.80; degrees of freedom, 4; P <0.0001) and for ofloxacin from 4.7% to 35.0% over the same period (chi-square 21.32; degrees of freedom, 4; P < 0.001). Streptococcus species and coagulase-negative Staphylococcus species showed significant resistance to bath fluoroquinolones but no change in resistance over the study period. The gram-negative organisms showed good susceptibility to the fluoroquinolones.
Conclusions: This in vitro study shows a significant increased resistance of *S. aureus* to the fluoroquinolones from 1993 to 1997. In addition, gaps in fluoroquinolone coverage for Streptococcus and coagulase-negative Staphylococcus species raise concern for the use of monotherapy in treating bacterial keratitis. Contrary to what might be expected, the distribution of gram-positive to gram-negative organisms has shifted, with a decrease in the number of gram-postive organisms identified, while the number of gram-negative isolates has remained stable.

Chaudhry NA, Flynn HW, Murray TG, et al. Emerging Ciprofloxacin-resistant *Pseudomonos aeruginosa*. Am J Ophthalmol 1999; 128:509-510.

Purpose: To report a clinical series of ciprofloxacin-resistant ocular isolates of *Pseudomonas aeruginosa* from a tertiary care opthalmic center.
Methods: Review of in vitro sensitivities of all ocular isolates of *P. aeruginosa* between July 1991 and September 1998. In vitro resistance was defined as a minimum inhibitory concentration of 4 or more microg per ml.
Results: Nine of 423 ocular isolates of *P. aeruginosa* showed in vitro resistance to ciprofloxacin. From 1991 to 1994, 0.44% (1/227) of ocular isolates were resistant to ciprofloxacin, whereas from 1995 to 1998, 4.1% (8/ 196) of ocular isolates showed in vitro resistance (P = .014).
Conclusions: Ciprofloxacin-resistant *P. aeruginosa* has been identified in recent clinical ocular specimens. Ciprofloxacin resistance among ocular isolates of *P. aeruginosa* is a local and worldwide concern.

Comments:

With the advent of the fluoroquinolones, they have become the antibiotics of choice for many physicians dealing with eye infections. Since the fluoroquinolones are well tolerated and very effective, even many ophthalmologists have abandoned culture in low-grade corneal infections. These articles indicate that a certain grace period in the treatment of corneal ulcers is ending, and therapy that is more aggressive will become the norm as resistance spreads in both gram-negative and gram-positive bacteria.

Does Glaucoma Shorten Your Life?

Hiller R, Podgor MJ, Sperduto RD, et al. High intraocular pressure and survival: The Framingham Studies. Am J Ophthalmol 1999; 128; 440-445.

Purpose: To examine whether high intraocular pressure (greater than or equal to 25 mm Hg) or a history of treatment for glaucoma is associated with decreased survival and, if so, how such ocular markers might be explained.
Methods: Eye examinations, including applanation tonometry, were conducted on members of the Framingham Eye Study cohort from February 1, 1973, to February 1, 1975. Participants who reported a history of treatment for glaucoma were identified. Survival data, including information on the date of death, were available from the time of the Eye Study through March 31, 1990.
Results: Of the 1,764 persons under the age of 70 years at the baseline eye examination, 1,421 persons had low intraocular pressure ($\leq$ 20 mm Hg), 264 persons had medium intraocular pressure levels (20 to 24 mm Hg), and 79 persons had high intraocular pressure ($\geq$ 25 mm Hg) or history of glaucoma treatment. During the follow-up period, 29%, 30%, and 47% died in the groups with low, medium, and high intraocular pressure (or history of glaucoma treatment), respectively. In an age-and-sex adjusted Cox proportional hazards analysis, the death rate ratio for the group with medium intraocular pressure relative to the group with low intraocular pressure was 1.04. The corresponding death rate ratio for the group with high intraocular pressure was 1.56 with a 95% confidence interval of 1.11 to 2.19 ($P < .001$). After adjustment for age, sex, hypertension, diabetes, cigarette smoking, and body mass index, a positive relationship remained, but at a borderline level of significance ($P = .075$).
Conclusions: High intraocular pressure or the presence of glaucoma is a marker for decreased life expectancy in the Framingham Eye Study cohort. The relationship is present even after adjustment for risk factors known to be associated with higher mortality such as sex, hypertension, diabetes, cigarette smoking, and body mass index. Special attention to the general health status of patients with high intraocular pressure or glaucoma seems warranted.

Comments:

Research indicates that elevated intraocular pressure is a risk factor for decreased life expectancy. It may be useful to pay close attention to those patients with glaucoma, as it seems to be a marker for decreased life expectancy. Conversely, those patients with hypertension, diabetes and obesity, as well as those who smoke, have been found in some studies to be at increased risk for glaucoma.

LASIK Complications

Stulting RD, Carr JD, Thompson KP, et al. Complications in laser in situ keratomileusis for the correction of myopia. Ophthalmology 1999; 106:13-20.

Objective: To determine the incidence and severity of complications from laser in situ keratomileusis (LASIK) for the correction of myopia by experienced and inexperienced surgeons.
Design: Prospective, observational clinical study.
Participants: Fourteen surgeons and 1062 eyes of 574 myopic patients who desired surgical correction of myopia ranging from –2.00 to –22.50 diopters (D; mean, -7.57 D) and astigmatism no greater than 4.00 D participated in this study.
Intervention: Myopia was corrected with LASIK. Astigmatism was corrected with arcuate keratotomy at the same time as the initial procedure or subsequently.
Main Outcome Measures: Primary outcome measures were change in best spectacle-corrected visual acuity (BSCVA) and the incidence of complications.
Results: Eyes were followed for a mean of 9.5 months after their last surgical procedure (range, 2 weeks-21 months). Three hundred eighty-one eyes (36%) underwent 486 enhancement procedures 3 months or more after the initial treatment. There were 27 (2.1%) intraoperative and 40 (3.1%) postoperative complications. Laser ablation was not performed during the initial treatment of 17 (1.6%) eyes because of intraoperative complications. Seventy-four eyes gained 2 or more lines of BSCVA, while 50 eyes lost 2 or more lines of BSCVA. Only three eyes lost two or more lines of BSCVA to a level worse than 20/40. One eye with a flap buttonhole (BSCVA 20/50) also had an epiretinal membrane. The second eye (BSCVA 20/60) had a flap buttonhole that may have been related to a previous corneal transplant. The

third eye (-22.50 D before surgery) had a rhegmatogenous retinal detachment develop, reducing BSCVA from 20/60 to 20/200. The incidence of intraoperative complications decreased from 3.1% during the first 3 months to 0.7% during the last 9 months of the study (P = 0.02).

Conclusions: LASIK Is acceptably safe for the correction of myopia. Although complications occur in approximately 5% of cases, these rarely lead to visual loss of more than two Snellen lines and postoperative acuity below 20/40. Flap buttonholes were more likely to cause loss of BSCVA than free or incomplete flaps (P = 0.02); flap buttonholes may be more likely in eyes that have undergone previous surgery. Complication rates can be reduced as the surgical team gains experience.

Comments:

This year over 1 million cases of Laser In Situ Keratomileusis (LASIK) will be performed in this country. It is of interest to physicians to understand the basics and complications of the procedure. In LASIK, a partial thickness flap is made in the cornea with a machine called a microkeratome. The underlying bed is lasered to correct the refractive error of the eye, and the flap is replaced. Complications include problems in achieving the flap, infection/inflammation, epithelial ingrowth, and irregular astigmatism.

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