

Abstract Selection

Nutrition and laryngeal cancer. Riboli, E., Kaaks, R., Esteve, J. Unit of Nutrition and Cancer, International Agency for Research on Cancer, Lyon, France. *Cancer Causes and Control* (1996) January, Vol. 7 (1), pp. 147–56.

The main etiologic factors of cancers of the larynx and hypopharynx are alcohol and tobacco, and their prevalence in different populations explains, to a large extent, the wide variations in incidence observed around the world. Besides these two main risk factors, however, diet also seems to play a role in determining the risk of these cancers. There is consistent evidence that low consumption of fruit and vegetables is associated with higher risk, after statistical adjustment for alcohol and tobacco. Consumption of vegetable oils and fish and a moderately high polyunsaturated/saturated fatty acid ratio (P/S ratio) were reported to be associated with reduced risk. Low intake of vitamin C, beta-carotene and vitamin E were reported consistently to be associated with higher laryngeal cancer risk, but there was no clear evidence that these micronutrients are better predictors of cancer risk than the principal food groups from which their intake levels were estimated, i.e., fruits, vegetables, vegetable oils, and fish. Given the overwhelming role of tobacco and alcohol in the etiology of these cancers and the extremely low incidence among nonsmokers/nondrinkers, the available studies provide no estimate of the role of diet in subjects not exposed to these factors. The evidence indicates, however, that, in the presence of tobacco and/or alcohol, low intake of fruit and vegetables may account for 25 to 50 per cent of the cases among men. Author.

Telomerase activity in head and neck squamous cell carcinoma and adjacent tissues. Mao, L., El-Naggar, A. K., Fan, Y. H., Lee, J. S., Lippman, S. M., Kayser, S., Lotan, R., Hong, W. K. Department of Thoracic/Head and Neck Medical Oncology, The University of Texas M.D. Anderson Cancer Center, Houston 77030, USA. *Cancer Research* (1996) December 15, Vol. 56 (24), pp. 5600–4.

The primary function of telomerase is the synthesis of telomeric DNA, which is the main pathway by which telomere length is maintained in the human germline and stem cells. Activation of telomerase is associated with elongation of telomeres and cell immortalization. Recently, telomerase activity has been detected in tissues from many human cancers but not in the majority of normal tissues, suggesting that telomere stabilization and telomerase activation may play a role in tumorigenesis. To explore telomerase activity in head and neck neoplastic and preneoplastic tissues, we studied 16 head and neck squamous cell carcinoma (HNSCC) cell lines and 60 specimens from 29 patients with HNSCC for telomerase activity. We precisely compared telomerase activity with histological features in adjacent tissue sections. We detected telomerase activity in 16 of 16 (100 per cent) HNSCC cell lines, 26 of 29 (90 per cent) invasive tumours, seven of seven (100 per cent) dysplastic lesions and five of five (100 per cent) hyperplastic lesions, whereas 0 of 17 normal tissues or two hyperkeratotic lesions had detectable telomerase activity. Our data indicate that activation of telomerase activity is frequent in HNSCC and may occur early in the tumorigenesis process. The reactivation of telomerase may be a useful marker for cancer risk assessment in the oral cavity. Author.

Detection of telomerase activity in oral rinses from head and neck squamous cell carcinoma patients. Califano, J., Ahrendt, S. A., Meiningner, G., Westra, W. H., Koch, W. M., Sidransky, D. Department of Otolaryngology–Head and Neck Surgery, The Johns Hopkins Hospital, Baltimore, Maryland 21205, USA. *Cancer Research* (1996) December 15, Vol. 56 (24), pp. 5720–2.

Telomerase is a ribonucleoprotein that maintains telomere length

and whose activity is associated with escape from cellular senescence. Telomerase activity has been found in germline, immortalized, and malignant tumour cells. Using a modified PCR-based assay for telomerase activity, 26 of 35 (80 per cent) primary, fresh, head and neck squamous cell cancer specimens and three of six head and neck squamous dysplastic lesions possessed telomerase activity. In addition, 14 of 44 (32 per cent) oral rinses from a separate group of head and neck squamous cell cancer patients contained detectable telomerase activity, whereas one of 22 (five per cent) oral rinses from normal control patients exhibited telomerase activity. Telomerase activity in oral rinses was compared with corresponding activity in paired primary tumor samples for 19 cases: seven of 19 demonstrated activity in both tumour and oral rinse, two of 19 lacked activity in both tumour and oral rinse, 10 of 19 tumours demonstrated activity that could not be detected in corresponding oral rinses, and there were no examples of positive oral rinses with corresponding negative tumours. Although currently limited in its sensitivity, analysis of telomerase activity in oral rinses represents a novel method to detect the presence of cancer cells shed in the upper aerodigestive tract. Author.

Fluticasone propionate: topical or systemic effects? Howland, W. C. IIIrd. Healthquest Research, Austin, Texas 78759, USA. *Clinical Experiments for Allergy* (1996) May, Vol. 26 Suppl 3, pp. 18–22.

Intranasal corticosteroids have been shown to be more effective than oral antihistamines for the treatment of seasonal allergic rhinitis. However, there are some who question whether intranasally administered corticosteroids should be used due to potential systemic effects. Fluticasone propionate, a potent corticosteroid with high specificity for the glucocorticoid receptor, is available as an aqueous nasal spray for the treatment of allergic rhinitis. To determine whether the efficacy of fluticasone propionate aqueous nasal spray (FPANS) was due to direct topical effects on the nasal mucosa or to indirect systemic effects following absorption from the nasal mucosa or from the swallowed portion of an intranasal dose, FPANS 200 micrograms once daily was compared with oral fluticasone propionate 5 mg or 10 mg once daily or placebo for two weeks in patients with seasonal allergic rhinitis. These oral dosages were chosen to yield low but consistent plasma fluticasone propionate concentrations. Both clinician- and patient-rated scores for nasal obstruction, rhinorrhoea, sneezing, and nasal itching were significantly lower in the intranasal fluticasone propionate group compared with both oral fluticasone propionate groups. A separate placebo-controlled study was conducted in patients with perennial rhinitis to determine if administration of FPANS 200 micrograms once daily for one year was associated with adverse systemic effects. At the one-year assessment, there were no significant effects on bone mineral density or on biochemical markers of bone turnover. Similarly, there was no evidence of posterior subcapsular cataracts nor of glaucoma. Furthermore, there were no significant effects on hypothalamic-pituitary-adrenal axis function as assessed by plasma cortisol and 24-h urinary cortisol response to the 6-h cosyntropin stimulation test. These data confirm that the efficacy of FPANS for the treatment of allergic rhinitis results from direct topical effects, thus reducing the likelihood of adverse systemic effects. Author.

The use of radiologically placed gastrostomy tubes in head and neck cancer patients receiving radiotherapy. Tyldesley, S., Sheehan, F., Munk, P., Tsang, V., Skarsgard, D., Bowman, C. A., Hobenshield, S. E. Department of Radiation Oncology, British Columbia Cancer Agency, Vancouver, Canada. *International*

Journal of Radiation, Oncology, Biology and Physiology (1996) December 1, Vol. 36 (5), pp. 1205-9.

PURPOSE: Patients undergoing radiotherapy to the head and neck area frequently experience radiation reactions that can markedly restrict oral intake, require hospitalization, and occasionally cause treatment interruptions. The Vancouver Cancer Center (VCC) has recently employed radiologically placed gastrostomy tubes (G-tubes) in the management of this problem. A review of the patients on whom this procedure had been performed is the subject of this review. **METHODS AND MATERIALS:** Thirty-four patients had gastrostomy tubes inserted under radiologic guidance. This group is compared to a control group matched for age, sex, irradiated volume, and radiation dose, who did not have gastrostomy tubes. Patients with gastrostomy tubes were divided into two categories: (a) patients who had tubes inserted in anticipation of severe reactions, and (b) patients who developed severe radiation reactions necessitating nutritional support. **RESULTS:** The gastrostomy group consisted of 65 per cent males with an average age of 59 years and stage range of II (12 per cent), III (24 per cent), and IV (65 per cent). In both the elective group and the nonelective group, patients maintained their weight at 95 to 97 per cent of the pretreatment weight, at follow-up of six weeks and three months. This compared with an average weight loss in the control group of nine per cent at six weeks and 12 per cent at three months. The length of hospitalization was a mean of 4.9 days in the elective group and 19 days in the nonelective group. Complications were low compared to those documented in the literature, but included two tube migrations, two aspirations, and one gastrointestinal bleed. **CONCLUSIONS:** We believe that gastrostomy tubes contribute significantly to the management of patients with head and neck cancer, particularly in maintenance of nutrition, and they may decrease the need for hospitalization. Author.

A biomechanical laryngeal model of voice F0 and glottal width control. Farley, G. R. Boys Town National Research Hospital, Omaha, Nebraska 68131, USA. *Journal of the Acoustical Society of America* (1996) December, Vol. 100 (6), pp. 3794-812.

A simplified mathematical model of the larynx, based on biomechanical principles, is described. Components represented include cartilages (cricoid, thyroid, arytenoids, and corniculates), muscles (thyroarytenoid (TA), cricothyroid pars rectus (CTR), cricothyroid pars oblique (CTO), posterior cricoarytenoid (PCA), lateral cricoarytenoid (LCA), and transverse arytenoid (TrA)), ligaments (cricothyroid (CAL), anterior cricothyroid (ACTL), posterior cricothyroid (PCTL), and vocal ligaments (VL)), and subglottal pressure (PS). Model outputs included equilibrium positions of cartilages, the glottal width, and the estimated fundamental frequency (F0) of vocal fold vibration. Major findings were that TA, CTR, CTO, and TrA all had substantial effects on F0: that PCA caused glottal opening by rotating the arytenoids laterally; that LCA both ventrolaterally translated and medially rotated the arytenoids, producing minimal effects on glottal closure; and that TrA had major effects on glottal closure by dorsomedially translating and medially rotating the arytenoids. The effects of LCA and PCA were generally diminished as activation of other muscles was increased. Muscle activation plots (MAPs) were used to study the effects of independent parametric variation of several muscles on F0 and glottal width. Both of these parameters were found to be under simultaneous control by TA, CTR, CTO, and TrA. LCA and PCA also had some influence on F0 and glottal width contours, but this appeared to be of limited functional significance, since changes in F0 tended to be offset by changes in glottal closure. Finally, the functional significance of rotation and subduction of the cricothyroid joint was examined. It was found that the combination of subduction with rotation provided greatest control and range of F0 as muscle activation was varied systematically. Strengths and limitations of the current model are discussed, future developments are suggested, and implications of model results as constraints for neural modelling efforts are described. Author.

Preserved musical abilities following right temporal lobectomy. Koike, A., Shimizu, H., Suzuki, I., Ishijima, B., Sugishita, M. Department of Psychology, Sophia University, Tokyo, Japan. *Journal of Neurosurgery* (1996) December, Vol. 85 (6), pp. 1000-4. It has been widely accepted that the right temporal lobe plays a

major role in the processing of music. One of the main lines of evidence was derived from Milner's study, published in 1962, which reported that right temporal lobectomy led to a decline in patient scores on four of the six subtests (Tonal Memory, Timbre, Loudness, and Time subtests) of the Seashore Measures of Musical Talents. That finding had led some surgeons and patients to hesitate in choosing right temporal lobectomy as a treatment for intractable epilepsy. The authors examined performance on the Seashore Measures before and after operations in 20 patients with right temporal lobectomy and nine patients with left temporal lobectomy. No disturbances in the Seashore Measures were detected after temporal lobectomy on either side. The extent of these temporal lobectomies was smaller than that of the temporal lobectomies in Milner's study, as measured along the sylvian fissure (1.5-4 cm; mean 2.7 cm, standard deviation (SD) 0.92 cm) and the base of the temporal lobe (3.5-5.5 cm; mean 4.7 cm, SD 0.63 cm). These findings indicate that the region resected on right temporal lobectomy in the present study is not essential for basic musical processing. Author.

Olfactory evoked potentials: experimental and clinical studies. Sato, M., Kodama, N., Sasaki, T., Ohta, M. Department of Neurosurgery, Fukushima Medical School, Japan. *Journal of Neurosurgery* (1996) December, Vol. 85 (6), pp. 1122-6.

Olfactory evoked potentials (OEPs), obtained by electrical stimulation of the olfactory mucosa, were recorded in dogs and humans to develop an objective method for evaluating olfactory functions. In dogs, OEPs were recorded from the olfactory tract and the scalp. The latency of the first negative peak was approximately 40 msec. A response was not obtained after stimulation of the nasal mucosa and disappeared after sectioning of the olfactory nerve. With increasing frequencies of repetitive stimulation, the amplitude was reduced, suggesting that the response was synaptically mediated. These results demonstrate that evoked potentials from the olfactory tract and the scalp following electrical stimulation of the olfactory mucosa originate specifically from the olfactory system. In humans, a stimulating electrode with a soft catheter was fixed on the olfactory mucosa. The OEPs from the olfactory tract, recorded with a negative peak of approximately 27 msec, had similar characteristics to OEPs found in dogs. The OEPs from the olfactory tract in humans also originate specifically from the olfactory system. The authors postulate that OEPs obtained by electrical stimulation of the olfactory mucosa may prove useful for intraoperative monitoring of olfactory functions. Author.

Effects of an external nasal dilator on sleep and breathing patterns in newborn infants with and without congestion (see comments).

Scharf, M. B., Berkowitz, D. V., McDannold, M. D., Stover, R., Brannen, D. E., Reyna, R. Tri-State Sleep Disorders Center, Cincinnati, Ohio 45246, USA. *Journal of Pediatrics* (1996) December, 129 (6), pp. 804-8. Comment in: *Journal of Pediatrics* (1996) December, 129 (6), pp. 781-8.

BACKGROUND: We recently demonstrated that the use of an external nasal dilator reduced subjective snoring levels and improved sleep quality. Our study polysomnographically evaluated the effects of this device on the frequency of obstructive airway events during sleep in infants with and without congestion. **METHODS:** We used a crossover study to monitor 20 infants between the ages of two and four months (15 infants without congestion and five with congestion). Monitoring was conducted during two daytime sleep sessions in a crossover study in which infants slept with or without a cutdown version of an external nasal dilator (Breathe Right Nasal Strips, CNS, Inc., Bloomington, Minn.) in the first session with crossover to the other condition in the second session. A respiratory disturbance index consisting of apneas (pauses in respiration of at least eight seconds) or hypopneas (decreased airflow resulting in oxygen desaturation of at least three per cent) was determined. **RESULTS:** Babies without congestion showed a greater than 50 per cent reduction in respiratory disturbance index from 3.2 ± 2.8 to 1.2 ± 1.2 events per hour ($p < 0.005$). Congested infants showed a decrease from 6.9 ± 2.9 to 1.5 ± 1.6 events per hour ($p < 0.05$). Babies with the greatest number of events showed the greatest improvement. **CONCLUSION:** The use of an external nasal dilator reduces the frequency of obstructive respiratory events in infants. Author.

Recurrent otitis media during infancy and linguistic skills at the age of nine years. Luotonen, M., Uhari, M., Aitola, L., Lukkaroinen, A. M., Luotonen, J., Uhari, M., Korkeamäki, R. L. Department of Phoniatrics (ENT Clinic), University of Oulu, Finland. *Pediatric Infectious Diseases Journal* (1996) October, Vol. 15 (10), pp. 854–8.

OBJECTIVE: To assess the effects of early recurrent otitis media on linguistic development in children. We especially wanted to determine the possible significant consequences of early recurrent otitis media at school age. **METHODS:** We collected data retrospectively on recurrent otitis media episodes from the parents of 394 children in 18 school classes selected at random in a middle-sized city in Finland. Auditory comprehension was tested with a subset of the Illinois Test of Psycholinguistic Ability, picture vocabulary with the Peabody Picture Vocabulary Test (revised test version), morphologic competence with a Finnish Morphological Test and reading comprehension with a test designed for this purpose. **RESULTS:** Children with more than four otitis episodes before the age of three years performed less well in the reading comprehension test ($p = 0.01$ to 0.02) than children with fewer otitis media episodes. Multiple regression analysis adjusted for the confounding variables showed early otitis media to be associated with impaired reading comprehension test scores (regression coefficient -0.1245 , 95 per cent confidence interval -0.2245 to -0.0245 , $p = 0.01$), which also correlated significantly with the teachers' evaluation of the student's reading comprehension (Spearman rank correlation $r = 0.5$, $p < 0.01$). Otitis episodes after the age of three years were not associated with abnormal test results. **CONCLUSION:** Middle ear disease in infancy had a significantly adverse effect on reading comprehension as late as nine years of age, even among children whose acute episodes were effectively treated. Author.

A multicenter, double blind comparison of azithromycin and amoxicillin/clavulanate for the treatment of acute otitis media in children. McLinn, S. Scottsdale Pediatric Centre, AZ 85260-6743, USA. *Pediatric Infectious Diseases Journal* (1996) September, Vol. 15 (9 Suppl), pp. S20–3.

OBJECTIVE: To compare the efficacy and safety of azithromycin and amoxicillin/clavulanate in pediatric acute otitis media. **METHODS:** Investigators from 12 US centers recruited 677 children. In a randomized, double blind, double dummy fashion, participants received either azithromycin suspension ($n = 341$) once daily for five days or amoxicillin/clavulanate suspension ($n = 336$) in three divided doses daily for 10 days. **RESULTS:** Among evaluable patients satisfactory clinical response rates (cured and improved) measured 11 days after therapy began were 87.5 per cent in the azithromycin group and 87.9 per cent in the amoxicillin/clavulanate group; corresponding rates at 30 days were 73.5 per cent in the azithromycin and 71.2 per cent in the amoxicillin/clavulanate groups. Relapse rates were comparable for the treatment groups. Treatment-related side effects, primarily gastrointestinal, were reported significantly less frequently with azithromycin (8.8 per cent) than with amoxicillin/clavulanate (30.8 per cent) ($p < 0.0001$). Two (0.6 per cent) azithromycin patients and 12 (3.6 per cent) amoxicillin/clavulanate patients discontinued therapy because of treatment-related side effects ($p < 0.006$ between groups). **CONCLUSIONS:** In these children with acute otitis media, azithromycin given once daily for five days and amoxicillin/clavulanate given three times daily for 10 days had similar efficacy; however, azithromycin was significantly better tolerated. Author.

The effect of timing of ondansetron administration in outpatients undergoing otolaryngologic surgery. Sun, R., Klein, K. W., White, P. F. Department of Anesthesiology and Pain Management, University of Texas Southwestern Medical Center, Dallas 75235-9068, USA. *Anesthetic Analgesics* (1997) February, Vol. 84 (2), pp. 331–6.

A randomized, double-blind, placebo-controlled study was designed to compare the relative efficiency of prophylactic ondansetron, 4 mg intravenously (IV), when administered before induction of anesthesia or at the end of surgery to an outpatient population at high risk of developing postoperative nausea and vomiting (PONV). Patients undergoing otolaryngologic surgery were randomly assigned to one of three different treatment groups: Group I (placebo) received saline 5 ml prior to induction

of anesthesia and again at the end of surgery; Group II received ondansetron 4 mg in 5 ml prior to induction of anesthesia and saline 5 ml at the end of surgery; and Group III received saline 5 ml prior to induction of anesthesia and ondansetron 4 mg at the end of surgery. All patients received the same general anesthetic technique. A standardized regimen of rescue antiemetics was administered in the recovery room to patients with $>$ or $=$ 2 emetic episodes or at the patients request for persistent nausea. Episodes of nausea and vomiting, as well as the need for rescue antiemetics, were recorded for 24 h after the operation. The incidences of nausea and emesis in the recovery room after prophylactic ondansetron, 4 mg IV, administered either before induction (68 per cent and 20 per cent, respectively) or at the end of surgery (60 per cent and four per cent, respectively) were not significantly decreased compared to the placebo control group (80 per cent and 12 per cent, respectively). However, when ondansetron was administered at the end of the operation, it significantly reduced the need for rescue antiemetics in the recovery room (36 per cent vs 64 per cent in the control group). The postanesthesia care unit and hospital discharge times were similar in all three study groups. One patient in Group II and one patient in Group III were hospitalized because of intractable symptoms related to PONV. After discharge from the ambulatory surgery unit, the incidence of nausea, vomiting, and the need for rescue antiemetic drugs were similar in all three treatment groups. In conclusion, ondansetron (4 mg IV) was more effective in reducing the need for rescue antiemetics in the recovery room when administered at the end versus prior to the start of otolaryngologic surgery. Therefore, when ondansetron is used for antiemetic prophylaxis in outpatients undergoing otolaryngologic procedures, it should be administered at the end of the operation rather than prior to induction of anesthesia. Author.

Submillimeter-resolution MR of the endolymphatic sac in healthy subjects and patients with Meniere disease. Schmalbrock, P., Dailiana, T., Chakeres, D. W., Oehler, M. C., Welling, D. B., Williams, P. M., Roth, L. Department of Radiology, Ohio State University, Columbus, OH 43210, USA. *AJNR American Journal of Neuroradiology* (1996) October, Vol. 17 (9), pp. 1707–16.

PURPOSE: To evaluate the utility of submillimeter resolution MR imaging for direct depiction of functional soft-tissue components of the intraosseous endolymphatic duct and sac in healthy subjects and in patients with Meniere disease. **METHODS:** Axial MR images were acquired of 14 patients with Meniere disease and 14 healthy volunteers at 1.5 T with a short-echo-time steady-state 3-D gradient-echo sequence. Seven volunteers and eight patients were also studied with a T1-weighted 3-D spoiled gradient-echo sequence. T1/T2 relaxation times were estimated from studies with multiple flip angles. **RESULTS:** Independent of the acquisition method, intraosseous endolymphatic ducts and sacs were seen unambiguously in the ears of 20 of 21 healthy subjects but in only four of 12 asymptomatic and two of 10 symptomatic ears of patients with Meniere disease. Other labyrinthine structures were well depicted in all subjects. Furthermore, shorter relaxation times were measured for the contents of the vestibular aqueduct than for other labyrinthine structures. **CONCLUSION:** In our high-resolution study, the intraosseous portions of the endolymphatic ducts and sacs were depicted in most of the healthy subjects. They were frequently not seen in either ear of patients with unilateral Meniere disease, presumably because of their small size. Author.

Prevalence of sensorineural hearing loss in Asian children. Naem, Z., Newton, V. Manchester Royal Infirmary. *British Journal of Audiology* (1996) October, Vol. 30 (5), pp. 332–9.

The study was designed to assess whether Asian children were at an increased risk of having sensorineural hearing loss. All the Asian children aged between five and 16 years were identified from class lists to form the study group, and an equal number of non-Asian children, controlling for age and sex, were randomly selected from the Child Health records to form the control group. With parent's consent, a four frequency (1, 2, 4 and 8 kHz) pure tone screening test was carried out on the children in both groups. There was a second screen for the failures and a diagnostic assessment for those failing again. Prevalence rate was calculated for two categories of hearing impairment (mild-to-profound and moderate-to-profound) and for the better and worse ear, resulting in four prevalence estimates for each group. The absolute

prevalence rates for the Asian children were all consistently higher (ranging from 5.09 to 9.61 per 1000) than the non-Asian children (ranging from 1.4 to 3.51 per 1000) and the relative risk measure showed the Asian group to be 2.42–3.61 times at greater risk of having a hearing loss. The results of this study were compared with other studies and inconsistencies were discussed with reference to methodological differences and deficiencies. It was concluded that Asian children were at an increased risk of sensorineural hearing loss. Author.

Endoscopic assisted otoplasty: a preliminary report. Graham, K. E., Gault, D. T. Centre for Plastic and Reconstructive Surgery, Mount Vernon and Watford Hospitals NHS Trust, Northwood, UK. *British Journal of Plastic Surgery* (1997) January, Vol. 50 (1), pp. 47–57.

The use of endoscopy in facial aesthetic surgery, especially the browlift, is becoming well accepted. We report on the use of an endoscopic assisted technique to correct prominent ears in 10 patients. The instruments were inserted through scalp incisions. No skin excision was performed. The posterior (medial) cartilage surface was weakened by abrasion with a custom-made abrader to create a new antihelical fold. Nonabsorbable sutures were inserted through one or two postauricular stab incisions to appose the scaphal cartilage and the mastoid fascia to hold the new fold. Surgical technique, results and advantages of the operation are discussed. A new classification of prominent ears was used in patient selection for the procedure. Author.

Influence of chronic kanamycin administration on basement membrane anionic sites in the labyrinth. Yamasoba, T., Suzuki, M., Kaga, K. Department of Otolaryngology, University of Tokyo, Japan. *Hearing Research* (1996) December 1, Vol. 102 (1–2), pp. 116–24.

We studied the effect of chronic treatment with kanamycin on the basement membrane (BM) anionic sites in the cochlea and endolymphatic sac using polyethyleneimine (PEI) as a cationic tracer. Albino guinea pigs weighing 250–300 g received kanamycin (400 mg/kg/day, i.m.) for 10 or 17 consecutive days. The number of BM anionic sites as derived from the PEI area was not affected in Reissner's membrane, spiral prominence, basilar membrane or endolymphatic sac, whereas it was significantly decreased in the stria vascularis and spiral limbus, being more marked in the guinea pigs treated for 17 days than in those treated for 10 days. The number of BM anionic sites in these regions did not recover until six weeks after kanamycin treatment. These findings suggest that chronically administered kanamycin may selectively and progressively affect the BM anionic sites in the stria vascularis and spiral limbus, resulting in disruption of a barrier function in the cochlea, and that severely impaired BM anionic sites in the cochlea may not recover. Author.

Intravascularly applied K(+)-channel blockers suppress differently the positive endocochlear potential maintained by vascular perfusion. Takeuchi, S., Kakigi, A., Takeda, T., Saito, H., Irimajiri, A. Department of Physiology, Kochi Medical School, Nankoku, Japan. *Hearing Research* (1996) November 1, Vol. 101 (1–2), pp. 181–5.

We studied the effects of several K⁺ channel blockers on the positive endocochlear potential (EP) of guinea pigs undergoing perfusion via the anterior inferior cerebellar artery. The EP level was reversibly suppressed by 50–60 per cent in the presence of Ba²⁺ (2 mM). Although the effective site(s) of these blockers at the cell level has not been located yet, these findings indicate an important role for a K⁺ conductance in the generation of the EP. Author.

Molecular epidemiology and retinoid chemoprevention of head and neck cancer. Khuri, F. R., Lippman, S. M., Spitz, M. R., Lotan, R., Hong, W. K. Department of Thoracic/Head and Neck Medical Oncology, The University of Texas M.D. Anderson Cancer Center, Houston 77030, USA. *Journal of National Cancer Institute* (1997) February 5, Vol. 89 (3), pp. 199–211.

Head and neck cancer is a major worldwide health problem; it has been estimated that approximately 900,000 people were diagnosed with this disease in 1995. Patients are generally treated with surgery and/or radiation therapy. Treatment, especially of patients

with early stage (I or II) head and neck squamous cell carcinoma, is often successful. A serious concern, however, is the fact that these patients subsequently develop second primary tumours of an annual rate of four to seven per cent. Molecular analyses of premalignant and malignant tissues have produced strong evidence that clonal genetic alterations occur during the early stage of aerodigestive tract carcinogenesis. Although the roles of tobacco and diet in head and neck carcinogenesis have been the subjects of epidemiologic investigations for many years, it has only recently become possible to integrate information regarding genetic susceptibility factors into the development of comprehensive risk models for these cancers. The molecular and epidemiologic studies provide the foundation on which clinical trials can be designed to evaluate the role of retinoids and other compounds in the reversal of premalignancy and the prevention of second primary tumours (i.e. in chemoprevention). This translational approach has led to studies of the utility of intermediate end point markers, such as the nuclear retinoic acid receptors, in chemoprevention strategies. Given the rapid advances occurring in this area of research, it may soon be possible to use these biomarkers to identify patients who are most at risk for developing head and neck cancer and who are most likely to benefit from chemopreventive interventions. Author.

Problems with the retrieval of long-standing inhaled foreign bodies in children. Barbato, A., Novello, A. Jr., Tormena, F., Corner, P. Department of Pediatrics, School of Medicine, University of Padova, Italy. *Monaldi Archives of Chest Diseases* (1996) October, Vol. 51 (5), pp. 419–20.

In the last seven years, we have removed 51 foreign bodies inhaled by children. In five cases involving long-standing foreign bodies, retrieval of the inhaled objects was complicated by their peripheral location in the bronchial tree and by the presence of abundant granulation tissue. In two of these children, the inhaled foreign bodies had been pushed further down the bronchial tree during a previous unsuccessful bronchoscopy. The use of a rigid bronchoscope with optical peanut forceps and two and four doses of an aqueous solution of epinephrine 1:100,000, at the dosage of 0.1 ml/kg-l. body weight (during removal of granulation tissue and after removal of the foreign bodies) permitted the complete removal of the foreign bodies in one session and a good control of bleeding. Author.

Otitis media in 2253 Pittsburgh-area infants: prevalence and risk factors during the first two years of life. Paradise, J. L., Rockette, H. E., Colborn, D. K., Bernard, B. S., Smith, C. G., Kurs-Lasky, M., Janosky, J. E. Department of Pediatrics, University of Pittsburgh School of Medicine, Pennsylvania, USA. *Pediatrics* (1997) March, Vol. 99 (3), pp. 318–33.

OBJECTIVE: As part of a long-term study of possible effects of early-life otitis media on speech, language, cognitive, and psychosocial development, we set out to delineate the occurrence and course of otitis media during the first two years of life in a sociodemographically diverse population of infants, and to identify related risk factors. **METHODS:** We enrolled healthy infants by age two months who presented for primary care at one of the two urban hospitals or one of two small town/rural and four suburban private pediatric practices. We intensively monitored the infants' middle-ear status by pneumatic otoscopy, supplemented by tympanometry, throughout their first two years of life; we monitored the validity of the otoscopic observations on an ongoing basis; and we treated infants for otitis media according to specified guidelines. **RESULTS:** We followed 2253 infants until age two years. The proportions developing > or = 1 episode of middle-ear effusion (MEE) between age 61 days (the starting point for data analysis) and ages six, 12 and 24 months, respectively, were 47.8 per cent, 78.9 per cent and 91.1 per cent. Overall, the mean cumulative proportion of days with MEE was 20.4 per cent in the first year of life and 16.6 per cent in the second year of life. Tympanostomy-tube placement was performed on 1.8 per cent and 4.2 per cent of the infants during the first and second years of life, respectively. By every measure, the occurrence of MEE was highest among urban infants and lowest among suburban infants; these differences were greatest in the earliest months of life. Overall, unadjusted mean cumulative proportions of days with MEE were higher among boys than girls, higher among black than white infants, and higher among Medicaid than

private health insurance enrollees. Cumulative proportions of days with MEE varied directly with the number of smokers in the household and with the number of other children to whom infants were exposed, whether at home or in day care, and varied inversely with birth weight, maternal age, level of maternal education, a socioeconomic index, and duration of breastfeeding. After adjustment, using multivariate analysis, the only variables that each remained independently and significantly related to the cumulative proportion of days with MEE were: during the first year of life, study site grouping, sex, the socioeconomic index, breastfeeding for > or = four months, the number of smokers in the household, and an index rating the degree of exposure to other children at home or in day care; and during the second year of life, sex, the socioeconomic index, and the child exposure index. The duration of breastfeeding and the degree of exposure to tobacco smoke contributed little to the explained variance, most was attributable to differences in the socioeconomic index and the child exposure index. **CONCLUSIONS:** Contrary to findings in many previous reports, the prevalence of otitis media during the first two years of life among lower-socioeconomic-status black infants appears to be as high as, if not higher than among lower-socioeconomic-status white infants, and certainly higher than among middle-class white infants. Among middle-class white infants the prevalence may also be higher than commonly assumed. The most important sociodemographic risk factors for otitis media appear to be low socioeconomic status and repeated exposure to large numbers of other children, whether at home or in day care. Author.

Effect of otitis media with effusion on gross motor ability in preschool-aged children: preliminary findings. Orlin, M. N., Effen, S. K., Handler, S. D. Medical College of Pennsylvania and Hahnemann University, USA. *Pediatrics* (1997) March, Vol. 99 (3), pp. 334-7.

OBJECTIVE: To investigate whether gross motor skills in preschool-aged children 24 to 60 months old with otitis media with effusion (OME) are different from those of preschool children without OME. **CHILDREN AND METHODS:** The gross motor portion of the Peabody Developmental Motor Scales (PDMS-GM) was used to compare 13 children with OME before and after tympanostomy tube placement to 12 children without

OME. **RESULTS:** The children with OME had significantly reduced scores preoperatively compared to those without OME on the PDMS-GM. After surgery, the children with OME had higher scores than those without OME, indicating an accelerated rate of development. **CONCLUSIONS:** Balance and motor development are additional factors to be considered in the medical and surgical management of the young child with chronic OME. Chronic OME may represent an additional problem for young children with existing motor deficits or other disabilities. Author.

Necrotizing fasciitis of the head and neck: role of CT in diagnosis and management. Becker, M., Zbaren, P., Hermans, R., Becker, C. D., Marchal, F., Kurt, A. M., Marre, S., Rufenacht, D. A., Terrier, F. Department of Radiology, University Hospital of Geneva, Switzerland. *Radiology* (1997) February, Vol. 202 (2), pp. 471-6. **PURPOSE:** To determine the characteristic diagnostic features of necrotizing fasciitis and to evaluate the role of computed tomography (CT) in its management. **MATERIALS AND METHODS:** 14 patients with surgically proved necrotizing fasciitis of the extracranial head and neck were examined with contrast material-enhanced CT. Clinical, radiologic, surgical, pathologic, and anatomic findings at admission and after initial treatment were analyzed retrospectively. **RESULTS:** Constant CT features of necrotizing fasciitis were diffuse thickening and infiltration of the cutis and subcutis (cellulitis); diffuse enhancement and/or thickening of the superficial and deep cervical fasciae (Fasciitis); enhancement and thickening of the platysma, sternocleidomastoid muscle, or strap muscles (myositis); and fluid collections in multiple neck compartments. Inconstant CT features included gas collections, mediastinitis, and pleural or pericardial effusions. All patients underwent extensive surgical debridement. Follow-up CT scans in 11 patients revealed clinically unsuspected progression of the inflammatory process in previously unaffected areas, a finding that warranted additional surgery in nine patients. Twelve patients survived, and two patients died of septic shock and aspiration pneumonia despite intensive surgical and medical treatment. **CONCLUSION:** Early recognition of necrotizing fasciitis with CT enables appropriate surgical treatment. CT may also be a useful guide in further patient treatment after initial surgical debridement. Author.