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The essence of medical practice

Scientific Basis of using Antibiotic in Upper RTIs

Contents

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Editorial

Dear Doctor,

We take this opportunity to thank you and show our gratitude for your remarkable support and appreciation to make our journey with Info Medicus successful and hope to see it continues in the days to come. The newsletter presents a unique blend of clinical and basic sciences with the quality and impact of all the published work reaching the highest levels. The strategic revamping of the Editorial Board and the addition of new clinical experts, the newsletter has been able to maintain its record of excellence.

In this issue, we have embellished Review Article by "Scientific basis of using Antibiotic in Upper Respiratory Tract Infections". Upper RTIs are the most common infectious diseases and among the commonest reasons for prescribing antibiotics, although most upper RTIs are viral in origin and require symptomatic treatment only. Antibiotic intervention should be based on knowledge of likely prevalent organisms and their current sensitivity.

Punch biopsies aid in the diagnosis of many different types of skin disorders and allows for the diagnosis of skin conditions by means of histologic examination of a sample of the full thickness of the skin. The procedure is easy to master and has a low risk of adverse events and complications. That's why we highlight "Method of Punch biopsy" in Clinical Method.

Moreover, we have presented "A novel claudin - 16 mutation, severe bone disease, and nephrocalcinosis" as Case Review which is an autosomal recessive disease due to mutations in the claudin - 16 or claudin - 19 genes. Claudin - 16 and 19 are tight junction proteins implicated in the paracellular absorption of calcium and magnesium from the thick ascending limb of the loop of Henle.

In "Diagnosis at a Glimpse" we have featured four case scenarios which, we think will be an enjoyable exercise for you.

Addition to these, we have featured some incredible news in "Medical Miracles". Besides these we also present some funny medical jokes which will serve as a hight moment.

Wishing you all a very happy and prosperous Bengali New Year 1421!

Thanks and best regards,

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Medical Services Manager

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Manager, Medical Information & Research

Scientific basis of using Antibiotic in Upper RTIs

Upper respiratory tract infections (URIs) are the most common infectious diseases. They include rhinitis (common cold), sinusitis, ear infections, acute pharyngitis or tonsillopharyngitis, epiglottitis, and laryngitis, of which ear infections and pharyngitis cause the more severe complications (deafness and acute rheumatic fever, respectively). The vast majority of URIs have a viral etiology. Rhinoviruses account for 25 to 30 percent of URIs; respiratory syncytial viruses (RSVs), parainfluenza and influenza viruses, human metapneumovirus, and adenoviruses for 25 to 35 percent; corona viruses for 10 percent; and unidentified viruses for the remainder. Because most URIs is self-limiting, their complications are more important than the infections. URTIs are among the commonest reasons for prescribing antibiotics, although most URTIs are viral in origin and require symptomatic treatment only. Antibiotic intervention should be based on knowledge of likely prevalent organisms and their current sensitivity. Clinical differentiation of viral and bacterial URTIs is unreliable. Ideally antibiotics should be prescribed based on samples sent for microbiological analysis. This is often not possible and antibiotic choice is commonly empirical.

Common Cold

Despite great advances in medicine, the common cold continues to be a great burden on society in terms of human suffering and economic losses. The common cold is a mild, self-limited URIs with symptoms of runny nose, sore throat, cough, sneezing, and nasal congestion. It is a heterogeneous group of viral diseases, and of the several viruses that cause the disease, the role of rhinoviruses is most prominent. About a quarter of all colds are still without proven cause, and the recent discovery of human metapneumovirus suggests that other viruses could remain undiscovered.

Therefore it does not respond to antibiotics. Between 1991 and 1999, the rate of overall antibiotic use for URIs decreased in the United States. However, the use of broad spectrum antibiotics increased. One study reviewed randomized controlled trials (RCTs) from 1966 to 2009 that compared antibiotic therapy with placebo in persons who had symptoms of acute URIs of less than seven days' duration, or acute purulent rhinitis of less than 10 days' duration.

Hence, there is not enough evidence of important benefits from the treatment of upper respiratory tract infections with antibiotics to warrant their routine use in children or adults and there is a significant increase in adverse effects associated with antibiotic use in adult patients.

Influenza

Influenza is an acute URIs caused by influenza virus A or B. It affects patients of all ages, but the highest incidence is in children. Adults older than 65 years and children younger than two years have the highest mortality rates from influenza. Vaccination is the mainstay of prevention. Supportive care is the foundation of treatment, but antiviral therapy, such as the neuraminidase inhibitors oseltamivir and zanamivir, may decrease the duration of the illness by one day if started within 48 hours of symptom onset. The Centers for Disease Control and Prevention no longer recommends the use of amantadine for influenza therapy.

So the use of amantadine and rimantadine should be discouraged. Because of their low effectiveness, neuraminidase inhibitors should only be used in a serious epidemic or pandemic alongside other public-health measures.

Number of Influenza-Infected patients experiencing secondary complications$^{\phi}$

Complication	Study Group Number		
	Placebo (n=129)	Oseltamivir, 75 mg (n=124)	Oseltamivir, 150 mg (n=121)
Otitis media	1	0	0
Sinusitis	11	6	4
Bronchitis	8	5	2
Pneumonia	1	0	0
Any secondary complication (%)	19 (15)	11 (9)*	6 (5)*
Antibiotic use (%)	14 (11)	8 (6)$^{+}$	4 (3)$^{+}$

*Combined oseltamivir results vs placebo (Fisher exact test), p = 0.03

$^{+}$ Combined oseltamivir results vs placebo (Fisher exact test), p = 0.05

$^{\phi}$ As a result of influenza illness and antibiotic use over the treatment period

Primary changes and updates in the recommendations

These recommendations include six principal changes or updates from previous recommendations for use of antivirals for the prevention and control of influenza:

- Antiviral treatment is recommended as soon as possible for patients with confirmed or suspected influenza who have severe, complicated, or progressive illness or who require hospitalization.
- Antiviral treatment is recommended as soon as possible for outpatients with confirmed or suspected influenza who are at higher risk for influenza complications on the basis of their age or underlying medical conditions; clinical judgment should be an important component of outpatient treatment decisions.
- Recommended antiviral medications include oseltamivir and zanamivir, on the basis of recent viral surveillance and resistance data indicating that > 99% of currently circulating influenza virus strains are sensitive to these medications. Amantadine and rimantadine should not be used because of the high levels of resistance to these drugs among circulating influenza A viruses, but information about these drugs is provided for use if current recommendations change because of the reemergence of adamantane-susceptible strains.
- Oseltamivir may be used for treatment or chemoprophylaxis of influenza among infants aged <1 year when indicated.
- Antiviral treatment also may be considered on the basis of clinical judgment for any outpatient with confirmed or suspected influenza who does not have known risk factors for severe illness if treatment can be initiated within 48 hours of illness onset.
- Because antiviral resistance patterns can change over time, clinicians should monitor local antiviral resistance surveillance data.

Persons at high risk of complications from Influenza who should be considered for Antiviral therapy

- Unvaccinated infants aged 12-24 months
- Persons with asthma or other chronic pulmonary diseases, such as cystic fibrosis in children or chronic obstructive pulmonary disease in adults
- Persons with hemodynamically significant cardiac disease
- Persons who have immunosuppressive disorders or who are receiving immunosuppressive therapy
- HIV-infected persons
- Persons with sickle cell anemia and other hemoglobinopathies
- Persons with diseases that requiring long-term aspirin therapy, such as rheumatoid arthritis or Kawasaki disease
- Persons with chronic renal dysfunction
- Persons with cancer
- Persons with chronic metabolic disease, such as diabetes mellitus
- Persons with neuromuscular disorders, seizure disorders, or cognitive dysfunction that may compromise the handling of respiratory secretions
- Adults aged > 65 years
- Residents of any age of nursing homes or other long-term care institutions

Note: *Although sufficient data do not exist to precisely define the extent of increased risk of influenza in these different groups of patients, there are data to suggest that the highest risk of both mortality and serious morbidity (e.g., hospitalization) occurs for severely immunocompromised patients (e.g., hematopoietic stem cell transplant patients) and very elderly (age, > 85 years) residents of nursing homes; infants aged < 24 months also have high hospitalization rates but lower case-fatality rates than do the other 2 groups*

Rhinosinusitis

Acute rhinosinusitis is a common diagnosis in the outpatient setting, with an annual incidence of approximately 13 percent in adults.

Rhinosinusitis is defined as

Inflammation of the nasal mucosa and sinuses characterized by two or more symptoms, one of which should be blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip)

- Facial pain/pressure (+)
- Reduction or loss of smell (+)

Visual analogue scale for symptom severity

To evaluate the total severity, the patient is asked to indicate on a VAS The number to the question:

How troublesome are your symptoms of rhinosinusitis?

10 cm

Not troublesome — Worst thinkable troublesome

The disease severity can be divided into Mild (0-3), Moderate (4-7) and Severe (8-10) using a 10 point scoring system or visual analogue scale (VAS). A VAS score of > 5 has been shown to adversely affect a patient's quality of life.

It can also be classified as acute when symptoms are present for less than four weeks, subacute for four to 12 weeks, and chronic for more than 12 weeks.

Differentiating between viral and bacterial rhinosinusitis is important because treatment of all cases would result in the overprescribing of antibiotics. The diagnosis of acute bacterial rhinosinusitis should not be made until symptoms have persisted for at least 10 days or after initial improvement followed by worsening of symptoms. Four symptoms are more predictive of bacterial rather than viral rhinosinusitis: purulent nasal discharge, maxillary tooth or facial pain, unilateral maxillary sinus tenderness, and worsening symptoms after initial improvement. Mild cases of acute bacterial rhinosinusitis can be managed with watchful waiting if appropriate follow-up can be ensured. Worsening symptoms within seven days warrant the initiation of antibiotics in these patients. Antibiotic treatment is acceptable in patients with severe or complicated acute bacterial rhinosinusitis. A Cochrane review of five studies in the primary care setting (n = 631 patients) found that antibiotic therapy for acute maxillary sinusitis has a slight statistical advantage over placebo. The antibiotic chosen should provide coverage for *Streptococcus pneumoniae, Haemophilus influenzae,* and *Moraxella catarrhalis* with amoxicillin as the first choice or trimethoprim/sulfamethoxazole for patients allergic to penicillin. A different antibiotic is justified if symptoms worsen within seven days. A meta-analysis of 12 RCTs (10 double-blinded, n = 4,430 patients) found no statistically significant difference between long- and short-course antibiotics for cure or improvement of symptoms. Short-course antibiotic therapy (median of five days' duration) was as effective as longer-course treatment (median of 10 days' duration) in patients with acute, uncomplicated bacterial rhinosinusitis.

Intervention considered in Rhinosinusitis guideline development

Diagnosis	Targeted history Physical examination Anterior rhinoscopy Transillumination Nasal endoscopy, nasal swabs Antral puncture Culture of nasal cavity, middle meatus, or other site	Imaging procedures Blood tests; CBC, others Allergy evaluation and testing Immune function testing Gastroesophageal reflux Pulmonary function tests Mucocilliary dysfunction tests
Treatment	Watchful waiting/observation Education/information Systemic antibiotics Topical antibiotics Oral/topical steroids Systemic/topical decongestants Antihistamines and mucolytes	Leukotriene modifiers Nasal saline Analgesics Complementary and alternative medicine Postural drainage/heat Biopsy (excluded from guideline) Sinus surgery (excluded from guideline)
Prevention	Topical steroids Immunotherapy Nasal lavage Smoking cessation Hygiene	Education Pneumococcal vaccination Influenza vaccination Environmental controls

Pharyngitis and Tonsillitis

Acute pharyngitis is one of the most frequent illnesses for which pediatricians, internists, and other primary care physicians are consulted. Although the group A streptococcus is the most common bacterial cause of acute pharyngitis, only a small percentage of patients with this condition are infected by group A streptococci. Approximately 90 percent of adults and 70 percent of children with pharyngitis have viral infections. Common signs and symptoms of streptococcal pharyngitis include sore throat, temperature greater than 100.4°F (38°C), tonsillar exudates, and cervical adenopathy. Cough, coryza, and diarrhea are more common with viral pharyngitis. In those with bacterial cases of pharyngitis, appropriate antibiotic treatment in these cases has been shown to decrease the risk of rheumatic fever, alleviate symptoms, and decrease communicability. Antibiotic treatment does not prevent glomerulonephritis and has inconsistent results in the prevention of peritonsillar abscess.

Modified Centor Criteria for Pharyngitis and Tonsilitis

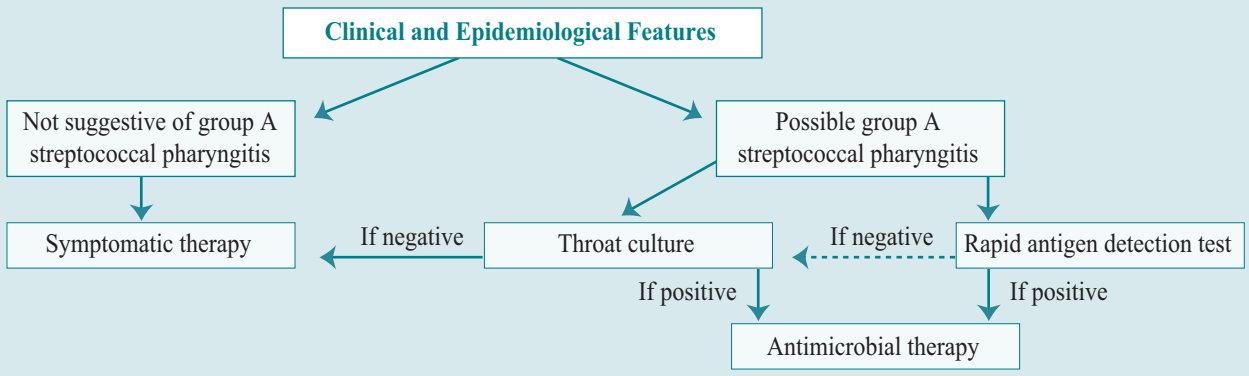
Clinical finding	Points
Absence of cough	1
Age	
3 to 14 years	1
15 to 45 years	0
Older than 45 years	-1
Anterior cervical lymphadenopathy	1
Fever	1
Tonsillar erythema or exudates	1

Note: Patients with a score of 1 or less do not require further testing or treatment, although contact with a person who has documented streptococcal infection should be considered in patients with a score of 1, and testing should be performed in these cases; those with a score of 2 or 3 should have rapid antigen detection testing and, if results are positive, should receive antibiotics; and those with a score of 4 or 5 should receive antibiotics

The Infectious Diseases Society of America recommends diagnostic testing to confirm group A beta- hemolytic streptococcal infection before initiating antibiotics to avoid overuse. However, the American Academy of Family Physicians and the American College of Physicians recommend using the Modified Centor Criteria, which are based on age and the presence or absence of fever, tonsillar erythema or exudates, anterior cervical lymphadenopathy, and cough. In patients with a score of 1 or less, no further diagnostic testing or treatment is indicated because the likelihood of streptococcal infection is low. However, in patients with a score of 1, other factors should be considered, such as contact with a person who has documented streptococcal infection; rapid antigen detection testing should be performed in these patients. In those with a score of 2 or 3, streptococcal rapid antigen detection testing should also be performed. If test results are positive, antibiotic treatment is indicated. Antibiotic therapy is recommended for patients with a score of 4 or 5.

The recommended first-line treatment is a 10 days course of penicillin. Erythromycin can be used in patients who are allergic to penicillin. Amoxicillin, azithromycin, and first-generation cephalosporins are appropriate alternatives.

Diagnosis of Acute Pharyngitis



Note: *The algorithm applies to uncomplicated cases of acute pharyngitis. Additional diagnostic and therapeutic measures may be necessary for patients with suppurative complication (e.g., peritonsillar abscess or cervical lymphadenitis) or infection with uncommon pharyngeal bacterial pathogens (e.g., Cornybacterium diptheriae, Nieseria gonorrhoeae) is suspected*

Otitis Media

The diagnosis of acute otitis media (AOM) requires an acute onset of symptoms, the presence of middle ear effusion, and signs and symptoms of middle ear inflammation. The most common pathogens are non typeable *H.influenzae, S.pneumoniae,* and *M.catarrhalis.*

Viruses have been found in the respiratory secretions of patients with AOM and may account for many cases of antibiotic failure. Group-B streptococcus, gram-negative enteric bacteria, and *Chlamydia trachomatis* are common middle ear pathogens in infants up to eight weeks of age.

There are many reasons why children are more likely to suffer from otitis media than adults. First, children have more trouble fighting infections. This is because their immune systems are still developing. Another reason has to do with the child's eustachian tube. The eustachian tube is a small passageway that connects the upper part of the throat to the middle ear. It is shorter and straighter in the child than in the adult. It can contribute to otitis media in several ways. The eustachian tube is usually closed but opens regularly to ventilate or replenish the air in the middle ear. This tube also equalizes middle ear air pressure in response to air pressure changes in the environment. However, a eustachian tube that is blocked by swelling of its lining or plugged with mucus from a cold or for some other reason cannot open to ventilate the middle ear. The lack of ventilation may allow fluid from the tissue that lines the middle ear to accumulate. If the eustachian tube remains plugged, the fluid cannot drain and begins to collect in the normally air-filled middle ear. One more factor that makes children more susceptible to otitis media is that adenoids in children are larger than they are in adults. Adenoids are composed largely of cells (lymphocytes) that help fight infections. They are positioned in the back of the upper part of the throat near the eustachian tubes. Enlarged adenoids can, because of their size, interfere with the eustachian tube opening. In addition, adenoids may themselves become infected, and the infection may spread into the eustachian tubes. Bacteria reach the middle ear through the lining or the passage way of the eustachian tube and can then produce infection, which causes swelling of the lining of the middle ear, blocking of the eustachian tube, and migration of white cells from the bloodstream to help fight the infection. In this process the white cells accumulate, often killing bacteria and dying themselves, leading to the formation of pus, a thick yellowish-white fluid in the middle ear. As the fluid increases, the child may have trouble hearing because the eardrum and middle ear bones are unable to move as freely as they should. As the infection worsens, many children also experience severe ear pain. Too much fluid in the ear can put pressure on the eardrum and eventually tear it.

Cohort studies and RCTs have shown that AOM typically resolves without antibiotic therapy in children. In 2004, the American Academy of Pediatrics and the American Academy of Family Physicians developed guidelines for the treatment of AOM. These guidelines list observation as an option for children older than six months; observation involves deferring antibiotic treatment for 48 to 72 hours and initiating therapy only if symptoms persist or worsen. However, two RCTs conducted in 2011 found that immediate antibiotic use in children 6 to 35 months of age was more effective than observation. These studies used strict criteria, tympanometry, or otoscopy for diagnosis and follow-up. Febrile infants (up to eight weeks of age) with AOM should have a full sepsis workup. These infants should undergo an otolaryngology consultation, if available, for tympanocentesis. Immediate initiation of antibiotics is recommended in children younger than two years with bilateral AOM and in those with AOM and otorrhea. Amoxicillin (80 to 90 mg per kg per day, in two divided doses) is recommended as first-line treatment for AOM.

If there is no response to initial antibiotic therapy within 48 to 72 hours, the patient should be re-examined to confirm the diagnosis, and amoxicillin/clavulanate should be initiated. Ceftriaxone can be used as a second-line agent or in children with vomiting. Trimethoprim/sulfamethoxazole and erythromycin/sulfisoxazole are not effective for the treatment of AOM. Longer courses of antibiotics (more than seven days) have lower failure rates than shorter courses.

Children with AOM should be reevaluated in three months to document clearance of middle ear effusion. Long-term antibiotic therapy has been shown to reduce the number of recurrent AOM episodes, but is not recommended because of the risk of antibiotic resistance.

Antibiotics are not recommended for the treatment of otitis media with effusion because they have only a modest short-term benefit.

Specific clinical issues addressed in the Agency for Healthcare Research and Quality evidence report were the

- Definition of AOM
- Natural history of AOM without antibacterial treatment
- Effectiveness of antibacterial agents in preventing clinical failure
- Relative effectiveness of specific antibacterial regimens. The AHRQ report focused on children between 4 weeks and 18 years of age with uncomplicated AOM seeking initial treatment. Outcomes included the presence or absence of signs and symptoms within 48 hours, at 3 to 7 days, 8 to 14 days, 15 days to 3 months, and more than 3 months and the presence of adverse effects from antibacterial treatment

Features of Otitis Media in a child

Otitis media is often difficult to detect because most children affected by this disorder do not yet have sufficient speech and language skills to tell someone what is bothering them. Common signs to look for are

- Unusual irritability
- Tugging or pulling at one or both ears
- Fluid draining from the ear
- Unresponsiveness to quiet sounds or other signs of hearing difficulty such as sitting too close to the television or being inattentive
- Difficulty sleeping
- Fever
- Loss of balance

This clinical practice guideline provides evidence based recommendations for the definition and management of AOM in children from 2 months through 12 years of age without signs or symptoms of systemic illness unrelated to the middle ear. It emphasizes accurate diagnosis and adherence to a consistent definition of AOM. Management of the pain associated with AOM is identified as an essential aspect of care. An option to observe a select group of children with AOM with symptomatic therapy for 48 to 72 hours is supported by evidence and may potentially lead to decreased use of antibacterial agents. If a decision is made to treat with an antibacterial agent, amoxicillin at a dose of 80 to 90 mg/kg per day is recommended as the initial antibacterial agent of choice

American Academy of Pediatrics (AAP) Guideline Definitions for Evidence-Based Statements

Statement	Definition	Implication
Strong recommendation	A strong recommendation in favor of a particular action is made when the anticipated benefits of the recommended intervention clearly exceed the harms (as a strong recommendation against an action is made when the anticipated harms clearly exceed the benefits) and the quality of the supporting evidence is excellent. In some clearly identified circumstances, strong recommendations may be made when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms.	Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
Recommendation	A recommendation in favor of a particular action is made when the anticipated benefits exceed the harms, but the quality of evidence is not as strong. Again, in some clearly identified circumstances, recommendations may be made when high-quality evidence is impossible to obtain but the anticipated benefits outweigh the harms.	Clinicians would be prudent to follow a recommendation but should remain alert to new information and sensitive to patient preferences.
Option	Options define courses that may be taken when either the quality of evidence is suspect or carefully performed studies have shown little clear advantage to one approach over another.	Clinicians should consider the option in their decisionmaking, and patient preference may play a substantial role.
No recommendation	No recommendation indicates that there is a lack of pertinent published evidence and that the anticipated balance of benefits and harms is unclear.	Clinicians should be alert to new published evidence that clarifies the balance of benefit versus harm.

for most children. Additional guidance is given for choosing an antibacterial agent when an alternative to amoxicillin is indicated. Also addressed is evidence related to the prevention of AOM and the role of complementary and alternative medicine (CAM) in the treatment of AOM.

Amoxicillin is the first-line antibiotic for treatment of acute otitis media

Epiglottitis

Epiglottitis is an inflammatory condition of the epiglottis and adjacent supraglottic structures that can rapidly progress to airway compromise and, potentially, death. It is predominantly caused by the *Hemophilus influenzae* type b organism (of which 36 percent may be resistant to ampicillin). Other hemophilus species, pneumococcus, strep. pyogenes and staph. are occasional offenders. The most common presenting symptom was fever; ranging from 38^0C to 41.2^0C. Other common symptoms are stridor, sore throat, drooling, dysphagia, and dyspnea.

The incidence of epiglottitis in children has decreased with the use of *H. influenzae* type b (Hib) conjugate vaccines in early infancy. A combination of an intravenous antistaphylococcal agent that is active against methicillin-resistant *Staphylococcus aureus* and a third-generation cephalosporin may be effective.

Intravenous monotherapy with ceftriaxone, cefotaxime, or ampicillin/sulbactam is also recommended.

Drug choices (after airway is secured)

- Primary: Ceftriaxone IV or Cefotaxime IV
- Alternatives: Ampicillin/sulbactam IV Levofloxacin or moxifloxacin IV (if penicillin anaphylaxis history)

Bronchitis and Tracheitis

Acute bronchitis is a self-limited inflammation of the large airways (including the trachea) that presents with cough and possibly phlegm production. The predominant etiology of acute bronchitis is viral; therefore, antibiotics are not indicated in most patients. Many studies have evaluated the use of antibiotics in the treatment of acute bronchitis and found no significant benefit from their use. Guidelines from the National Institute for Health and Clinical Excellence and the Centers for Disease Control and Prevention do not recommend antibiotics for the treatment of adults with acute bronchitis. A 2004 Cochrane review found a small decrease in cough and days of feeling ill in patients who received antibiotics; however, the authors do not recommend their use because of adverse reactions, antibiotic resistance, and cost. Individualized care focusing on symptom relief, as well as explaining to patients why antibiotics are not indicated, is appropriate in managing acute bronchitis in the outpatient setting. There is limited evidence to support the use of antibiotics in acute bronchitis. Antibiotics may have a modest beneficial effect in some patients with acute bronchitis though data on subsets of patients who may benefit more from treatment is lacking. However, the magnitude of this benefit needs to be considered in the broader context of potential side effects, medicalisation for a self limiting condition, increased resistance to respiratory pathogens and cost of antibiotic treatment.

It is important to differentiate pneumonia and influenza from bronchitis because antibiotics are recommended for patients with pneumonia, and antivirals may be indicated for those with influenza. Few cases of acute bronchitis are caused by Bordetella pertussis or atypical bacteria, such as *Chlamydia pneumoniae* and *Mycoplasma pneumoniae*. However, these infections are self-limited and do not warrant antibiotic use except in rare cases in which pneumonia develops or the patient is immunocompromised. The British Thoracic Society does not recommend using antibiotics to treat cough or head colds in children except when pertussis is suspected, and then macrolides should be administered early in the course of the disease. In patients with suspected pertusis, antibiotics are prescribed to curb the spread of disease rather than to change patient outcomes.

Laryngitis

Acute laryngitis is inflammation of the vocal cords and larynx lasting less than three weeks. Symptoms include loss or muffling of the voice, sore throat, and other classic URIs symptoms such as cough, fever, runny nose, and headache. A Cochrane review of antibiotic therapy in patients with laryngitis found two studies (n = 206 patients) showing that antibiotic use does not reduce the duration of symptoms or lead to voice improvement.

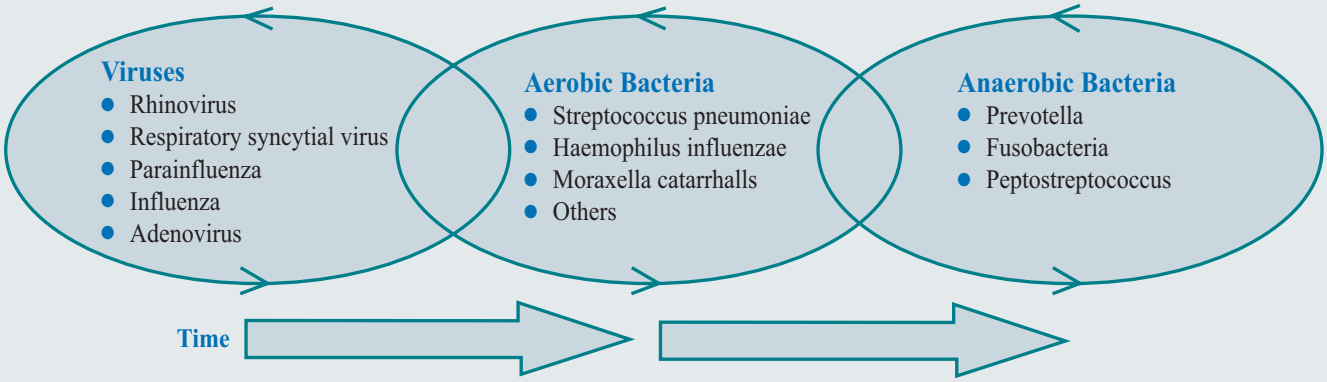
Although these studies are older, there are no recent studies to indicate that these conclusions have changed. Laryngitis is a self-limited, viral disease that does not respond to antibiotic therapy.

However, the authors do not recommend their use because of adverse reactions, antibiotic resistance, and cost. Individualized care focusing on symptom relief, as well as explaining to patients why antibiotics are not indicated, is appropriate in managing acute bronchitis in the outpatient setting.

It is important to differentiate pneumonia and influenza from bronchitis because antibiotics are recommended for patients with pneumonia, and antivirals may be indicated for those with influenza. Few cases of acute bronchitis are caused by *Bordetella pertussis* or atypical bacteria, such as *Chlamydia pneumoniae* and *Mycoplasma pneumoniae*. However, these infections are self-limited and do not warrant antibiotic use except in rare cases in which pneumonia develops or the patient is immunocompromised. The British Thoracic Society does not recommend using antibiotics to treat cough or head colds in children except when pertussis is suspected, and then macrolides should be administered early in the course of the disease. In patients with suspected pertussis, antibiotics are prescribed to curb the spread of disease rather than to change patient outcomes.

Viral Upper Respiratory Tract Infections can lead to bacterial infections

Viral upper respiratory tract infections can lead to acute bacterial infections (where aerobes predominate) ultimately to chronic one (where anaerobes predominate)



Diagnostic findings and appropriate Treatments for Upper Respiratory Tract Infections

Condition	Key diagnostic findings	Treatment
Acute bronchitis and tracheitis	Cough, possible phlegm production	Symptomatic treatment; antibiotics are not recommended
Acute otitis media	Acute onset of symptoms, presence of middle ear effusion, signs of middle ear inflammation	Amoxicillin, 80 to 90 mg per kg per day, in two divided doses (first-line treatment)
Acute rhinosinusitis	Nasal obstruction, anterior or posterior nasal discharge, facial pain, cough, decreased sense of smell	Watchful waiting in mild cases; purulent amoxicillin for severe or complicated bacterial rhinosinusitis
Common cold	Runny nose, cough, sore throat, sneezing, nasal congestion	Symptomatic treatment; antibiotics are not recommended
Epiglottitis	Dysphagia, voice change, tachycardia (heart rate > 100 beats per minute), drooling, fever, subjective shortness of breath, tachypnea (respiratory rate > 24 breaths per minute), stridor, respiratory distress, leaning forward	Intravenous combination of a third-generation cephalosporin and an antistaphylococcal agent active against methicillin- resistant Staphylococcus aureus or intravenous monotherapy with ceftriaxone, cefotaxime, or ampicillin /sulbactam
Influenza	Abrupt onset of fever, headache, myalgia, malaige	Influenza vaccination for prevention; supportive care; initiation of antiviral 48 hours of symptom onset may therapy within 48 hours of symptom onset may decrease illness duration by one day
Laryngitis	Loss or muffling of voice, sore throat, cough, fever, runny nose, headache	Symptomatic treatment; antibiotics are unnecessary
Pharyngitis and tonsillitis	Sore throat, fever, absence of cough	Treatment based on modified Centor score

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6. *N Engl J Med* 2011;364:116-26

Info Quiz Answers
January-March 2014

1. abc	2. acd	3. bc	4. a	5. a
6. b	7. b	8. d	9. d	10. a

Method of punch biopsy

A punch biopsy allows for the diagnosis of skin conditions by means of histologic examination of a sample of the full thickness of the skin. The procedure is easy to master and has a low risk of adverse events and complications.

Indications

Diagnostic purpose

- Pigmented lesions
- Suspected skin cancers
- Generalized skin eruptions
- Blistering diseases and vasculitides

Equipment

To perform a skin biopsy

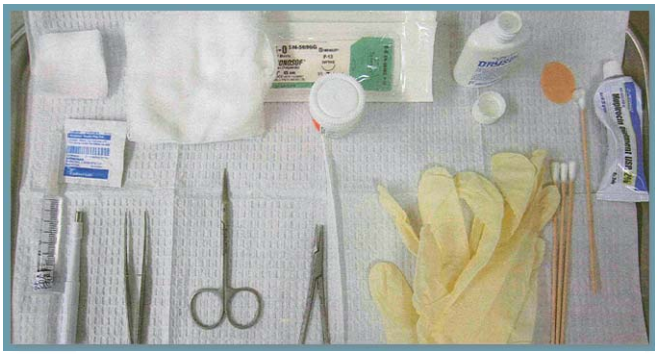
- Syringe with a 30 gauge needle and anesthetic
- Gloves
- Surgical forceps, preferably toothed to minimize crush artifact
- Pathology container filled with 10% formalin solution and laboratory requisition form
- Gauze, 2 inch X 2 inch or 4 inch X 4 inch

Dressing materials

- Petrolatum or antibiotic ointment
- Bandage or non-stick bandage and tape

For a punch biopsy

- Disposable punch instrument ranging from 2-8 mm in size
- Scissors
- Needle holder for suturing



Equipment used for a punch biopsy

- Desired size of suture
- Surgical blade (#15) and scalpel handle or disposable razor blade to shave biopsy

For hemostasis

- Chemical cauterization: Solution of 20% - 50% aluminum chloride or ferric subsulfate
- Electrical cauterization: Electrodessication, electrofulguration, or electrocoagulation may also be used

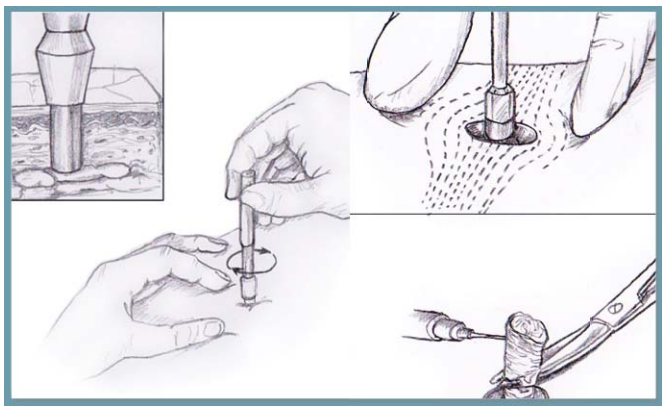
Procedure

Obtaining informed consent

When performing any medical procedure, it is important to inform the patient about its indications, risks, and benefits. After answering any questions or concerns the patient formal written consent must be obtained.

Performing the biopsy

- Begin the procedure by cleaning the area with an alcohol swab. If the lesion is poorly demarcated, it can be outlined with a skin-marking pen.



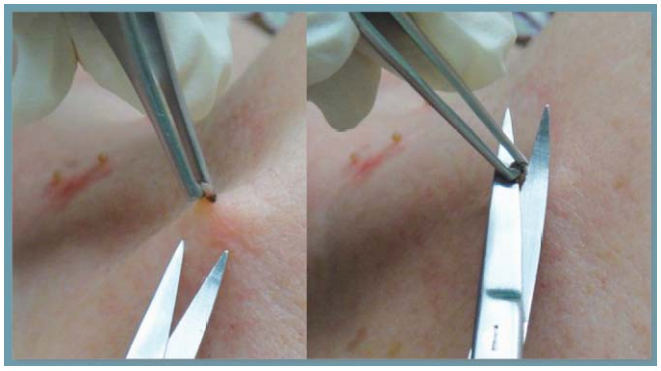
Steps of performing punch biopsy

- Anesthetize the area by inserting the needle parallel to the lesion and slowly raising an intradermal bleb beneath it. The effects of lidocaine are almost instantaneous. In highly vascular areas, such as the scalp, lidocaine with epinephrine should be used.
- For the biopsy of pigmented lesions, it is important to center the punch over the lesion; this will help to secure a complete sample.
- Start by stretching the skin at an angle that is perpendicular to the skin tension lines to create a elliptical wound which will minimize puckering once the wound is sutured.

- Holding the punch in hand and placing the fifth finger of that hand adjacent to the lesion for stability, position the punch over the biopsy site. For pigmented lesions, use imprint as a guide. Gently apply rotational and downward pressure on the punch instrument until feeling of "give" as it enters the layer of subcutaneous fat.
- Withdraw the punch and blot any bleeding with gauze. Use toothed forceps to lightly grasp and lift the specimen, taking special care not to crush it. If necessary, use scissors to cut the base of the specimen at the level of the fat.
- Place the specimen in a labeled receptacle that contains the appropriate transport medium. Confirm that no tissue has been inadvertently left in the punch instrument.
- When the specimen has been obtained, the wound may be sutured. Sutures should be placed perpendicular to the long axis of the punch defect or perpendicular to the skin tension lines. Place one, two, or three simple interrupted stitches, depending on the size and the location of the defect.

Post procedural care

- The application of a topical antibacterial agent after a punch biopsy is discouraged because allergic reactions are common.
- The biopsy site should be cleaned with soap and water twice a day. After dabbing it dry, the patient should apply petroleum jelly to aid healing.
- When sutures have been placed, they should be removed 1 to 2 weeks after the procedure, depending on their location.



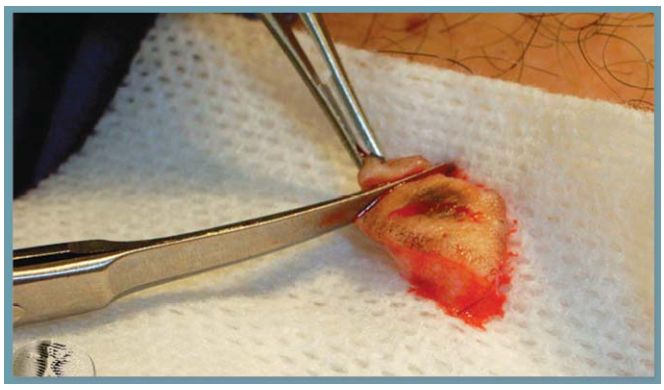
Scissors are used to make a tangential cut biopsy of a fibroma

Special precaution

- Although panniculitides may be assessed with the use of a punch biopsy, the preferred technique at some institutions is the wedge biopsy, which ensures adequate sampling of the fat in such lesions.
- A plain lidocaine solution without epinephrine should be used for pregnant women and for patients in whom epinephrine has unacceptable side effects.
- On the highly vascular scalp, bleeding may be brisk. Therefore, it is important to anticipate and prepare for increased bleeding.

The use of scissors to remove the specimen from the biopsy site

- In patients with thrombocytopenia or those being treated with anticoagulants, it is typical to place a pressure dressing over the sutured site to prevent late-onset bleeding. The pressure dressing can be removed by the patient 24 hours after the procedure and replaced with a common adhesive bandage.
- Remember the anatomy when performing a punch biopsy to avoid damage to major blood vessels and nerves.



Sending of tissue for histotathology

Contraindications

There are few absolute contraindications to a punch biopsy. Neither anticoagulation nor even severe thrombocytopenia is a contraindication; however, to anticipate bleeding complications, it is important to determine:

- The patient has a bleeding disorder.
- Taking any medications known to interfere with hemostasis, such as warfarin or aspirin.
- Any history of allergic reactions to local anesthetics, antiseptics, topical antibiotics, or adhesive tapes.
- Known history of adverse reactions to epinephrine.

References

1. *The New England Journal of Medicine,* September 12, 2013, 369; 11: e13 (1-5)
2. http://emedicine.medscape.com/article

A novel claudin-16 mutation, severe bone disease, and nephrocalcinosis

A 26 year old male came to the emergency department of The Royal London Hospital, with two self-terminating tonic clonic seizures. He reported a 3 month history of lethargy, weight loss, polyuria, and polydipsia. He had no notable past medical history and did not take any regular medication. His parents, first cousins, were well. He had seven siblings: three brothers died in infancy and one sister died in her 30s from an undetermined kidney problem. Physical examination was normal. There were no ocular abnormalities.

He had a severe metabolic acidosis with a pH - 6·58 (normal range 7·38 - 7·42), an almost undetectable bicarbonate level - 0·8 mmol/L (22 - 26 mmol/L), and renal failure with a creatinine - 1611 µmol/L (80 - 115 µmol/L). He had severe hypocalcaemia - 1·65 mmol/L (2·2 - 2·6 mmol/L) and hypomagnesaemia - 0·65 mmol/L (0·7 - 1·0 mmol/L). Parathyroid hormone (PTH) was 50 pmol/L (1·6 - 7 pmol/L) and alkaline phosphate was 215 mmol/L (30 - 130 mmol/L). His urinary pH was 6·3 and dipstick urinalysis was unremarkable. He was admitted to the intensive care unit for haemofiltration. CT identified two small kidneys with striking bilateral medullary nephrocalcinosis (Figure-A), which was consistent with end stage renal failure. Plain radiography showed bilateral neck of femur fractures, presumably sustained during hypocalcaemic seizures. He required bilateral hip replacements. His bone was so severely diseased that his right hip prosthesis evulsed through the shaft of his femur post-operatively (Figure-B), necessitating salvage surgery. Metabolic acidosis resolved with haemodialysis.

However, hypomagnesaemia and hypocalcaemia were refractory to treatment with calcium supplements, and finally responded to calcitriol and magnesium replacement. He remained seizure-free on maintenance haemodialysis.

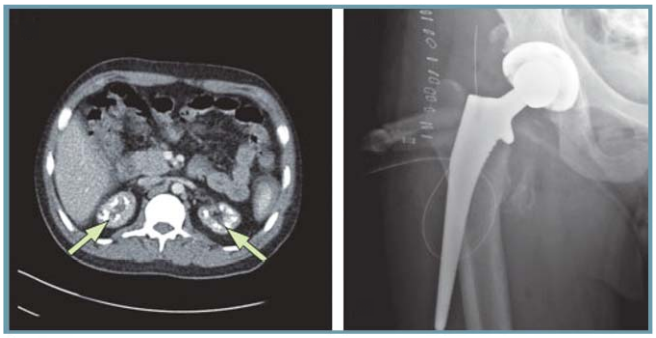


Figure: (A) CT abdomen showing small kidneys (7cm) with medullary nephrocalcinosis (arrows). (B) X-ray showing evulsed right hip prosthesis

Medullary nephrocalcinosis with normal renal function can result from dysregulated calcium metabolism or tubular or anatomical disease, and is most commonly caused by primary hyperparathyroidism, distal renal tubular acidosis (dRTA), or medullary sponge kidney. Nephrocalcinosis with a severe metabolic acidosis and an alkaline urine (pH>5·3) is diagnostic for dRTA. However, end stage renal failure is highly unusual in primary dRTA.

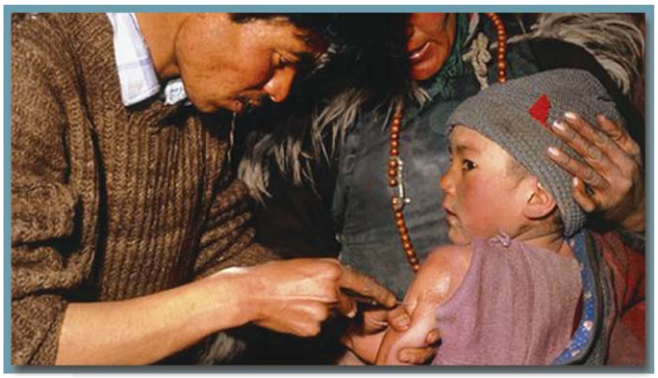
Nephrocalcinosis associated with end stage renal failure is usually seen with three genetic diseases: primary hyperoxaluria, Dent's disease, and familial hypomagnesaemia with hypercalciuria and nephrocalcinosis (autosomal recessive due to mutations in the claudin-16 or claudin-19 genes). The patient's family history, hypocalcaemia, and hypomagnesaemia suggested familial hypomagnesaemia with hypercalciuria and nephrocalcinosis. He had no ocular abnormalities (nystagmus, colobomata, myopia) associated with claudin-19 mutations, so we suspected a claudin-16 mutation. Using Sanger gene sequencing, we identified a novel homozygous splice site mutation in intron 1 of the claudin-16 gene (c.324 + 3_324 + 4insT), which was predicted to disrupt gene splicing with consequent aberrant protein production.

Claudin-16 and 19 are tight junction proteins implicated in the paracellular absorption of calcium and magnesium from the thick ascending limb of the loop of Henle. Familial hypomagnesaemia with hypercalciuria and nephrocalcinosis causes urinary calcium and magnesium wasting and subsequent nephrocalcinosis. Secondary dRTA4 (present in this patient) and nephrogenic diabetes insipidus can occur secondary to nephrocalcinosis, which also causes renal failure. Chronic hypocalcaemia and metabolic acidosis can cause severe bone demineralisation, predisposing to pathological fractures.

Supportive treatment includes calcium and magnesium replacement and a thiazide diuretic to reduce calciuria. When possible, screening of family members is warranted. Magnesium concentrations should be checked when treating any refractory hypocalcaemia; hypomagnesaemia impairs the PTH response to lowered calcium, which can exacerbate persistent hypocalcaemia. Management should include magnesium, calcium, and vitamin D replacement.

Reference: *The Lancet* 2014; 383 (9911): 98

Measles global deaths decline by 78%, WHO estimates



Global deaths from measles dropped 78% between 2000 and 2012, the World Health Organization estimates. New figures from the WHO suggest that around 13.8 million deaths were prevented during this time and reported cases declined by 77%.

Good routine immunization levels and campaigns to vaccinate children are thought to be behind the figures. But the WHO says, measles is still a global threat and some populations remain unprotected. The mortality estimates from the WHO show that annual measles deaths decreased from more than 562,000 in 2000 to 122,000 in 2012. Reported cases of measles worldwide declined from 853,480 to 226,722 over the same time. Currently, 84% of the world's infants receive the first dose of measles vaccine before their first birthday, according to the WHO.

It says that 145 countries have also introduced a routine second dose of measles vaccine to ensure immunity and prevent outbreaks. Mass campaigns against measles in 2012 resulted in a further 145 million children being vaccinated against the disease, taking the total number of vaccinated children to more than one billion since 2000.

However, there are still concerns that despite this good news, measles remains a worldwide threat. The regions of Africa, south-east Asia and Europe all experienced large outbreaks in 2012 and the Americas region had to deal with many imported measles cases. The Democratic Republic of Congo saw the largest measles outbreak of 2012, with 72,029 reported cases. There were around 18,000 cases in India and 12,000 in Ukraine, while the UK experienced just over 2,000 measles cases. The WHO says the Africa, Eastern Mediterranean and European regions are not likely to meet their measles elimination targets on time.

Pain 'dimmer switch' discovered by UK scientists

Pain sensitivity is controlled by a genetic "dimmer switch", which can be reset, UK scientists have discovered. Twins sharing 100% of genes have different pain thresholds, which can potentially be altered by lifestyle or medication, say researchers at King's College, London. The study could lead to new painkillers or lifestyle interventions whereas one in five of the population suffers from acute or chronic pain. Lead researcher of the team said that the potential to regulate genes involved in pain sensitivity is very exciting and could lead to a more effective pain relief treatment for patients suffering with chronic pain. Sensitivity to pain is complex, with wide individual variation. Previous studies have suggested about half of the influence is explained by genes.

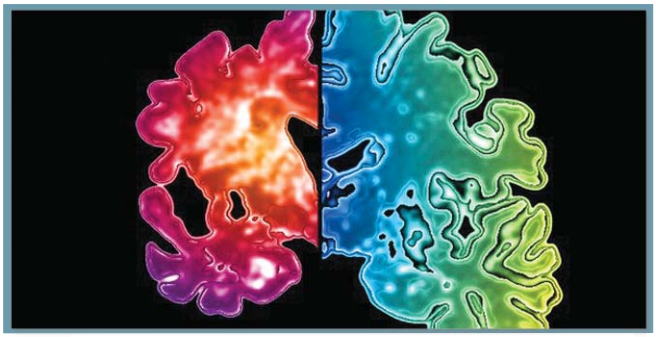
To identify levels of sensitivity to pain, scientists tested 25 pairs of identical twins using a heat probe placed on the arm. Identical twins share 100% of their genes; therefore any difference between identical twins must be due to their environment or changes affecting the function of their genes. Study participants were asked to press a button when the heat became painful for them, which allowed the researchers to determine their pain thresholds. Using DNA sequencing, the researchers examined the whole genetic codes (genomes) of the twins and compared them with 50 unrelated individuals.

The research team found chemical changes within nine genes involved in pain sensitivity that were different in one twin but not in her identical sister. These were most significant within a known pain sensitivity gene, which is already a target for the development of new painkillers. Research into the switching on and off of genes, a process known as epigenetic regulation, is a big growth area for the development of new medicines.

The Landmark of the study is that using drugs or changes in lifestyle, we might be able to reset that thermostat, allowing that person in the future to feel less pain. So the epigenetic changes are potentially reversible.

Blood test can predict Alzheimer's

A blood test can accurately predict the onset of Alzheimer's disease, according to US researchers. They showed that testing levels of 10 fats in the blood could predict with 90% accuracy - the risk of the disease coming on in the next three years. Their findings will now be tested in larger clinical trials. Experts said that the results needed to be confirmed, but such a test would be "a real step forward".



Loss of tissue in a demented brain compared with a healthy one

The number of people living with dementia stands at 44 million around the globe and is expected to treble by 2050. The disease silently attacks the brain for more than a decade before any symptoms emerge. Researchers think drug trials are failing because patients are simply being treated too late to make a difference. This is why discovering a test that predicts the risk of dementia is a major priority for the field. Scientists at Georgetown University in Washington DC analysed blood samples from 525 people over the age of 70 as part of a five-year study. They took 53 of them who developed Alzheimer's or mild cognitive impairment and compared their blood with 53 who stayed mentally agile.

They found differences in the levels of 10 lipids, or fats, between the two groups. And when the research team looked in the other blood samples, those 10 markers of Alzheimer's could predict who was likely to enter mental decline in the following years. However, a professor of neurology at Georgetown University Medical Center, told that there is a huge need for a test but larger numbers of people should be looked for before this could be used in clinical practice.

The full power of the test has not been investigated either. So far they know a diagnosis of dementia can be predicted three years ahead of time, but the researchers are now investigating whether the test works even earlier. It is not clear exactly what is causing the change in fats in the blood, but it could be a residue of the early changes in the brain. A successful test for Alzheimer's could transform medical research and treatment drugs could be tested at a much earlier stage in the disease. The Alzheimer's Society said the test needed to be investigated further, but could pose ethical challenges and if this does develop in the future people must be given a choice about whether they would want to know, and fully understand the implications.

Sweet tooth linked to heart attacks

Eating too many sugary drinks, desserts and sweets could increase the risk of having a heart attack, the findings of a large US study suggest.

Added sugar increase risk of heart attack

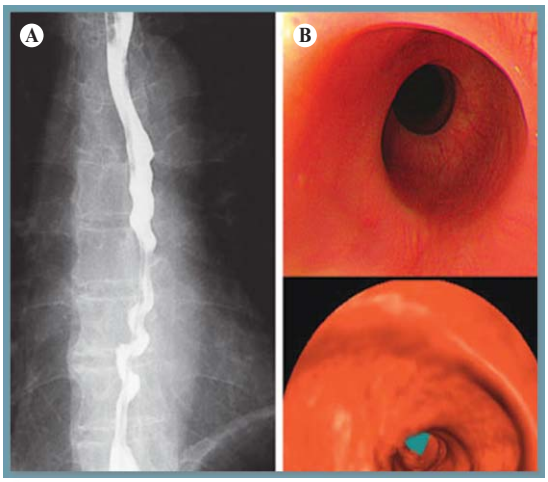
Consuming the equivalent of a can a day of sugar-sweetened fizzy drinks was associated with an increased risk of dying from cardiovascular disease, JAMA Internal Medicine reports. Sugar can lead to weight gain, which is bad for heart. Experts said people needed to be aware of this risk. In the study, which looked at data on sugar consumption among tens of thousands of people in the US as well as death rates from heart related problems, there was a significant link between the amount of sugar consumed and heart risk.

People who got a quarter of their daily calories from added sugar had more than three times the risk of dying from cardiovascular disease than people who consumed far less sugar, found at the Centres for Disease Control and Prevention in Atlanta. The World Health Organization (WHO) recommends that added sugar should make up less than 10% of total calorie intake. Food that is high in sugar will contain more than 22.5g of total sugars per 100g, while food that is low in sugar has 5g or less per 100g.

A renowned professor from the British Heart Foundation said there could be many reasons why people who eat lots of sugar became unhealthy. Of course, body needs sugar for energy but when consumed in excess, it will contribute to weight gain and, in turn, may accelerate heart disease. He also said that helping individuals cut not only their excessive fat intake, but also refined sugar intake, could have major health benefits including lessening obesity and heart attacks.

Reference: http://www.bbc.co.uk/news/health

Problem 1



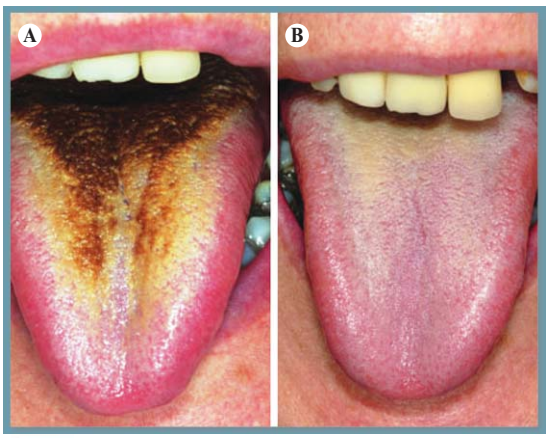
A 52 years old man visited to hospital to have a general checkup. Routine gastrointestinal endoscopy showed a twisted lumen with a corkscrew appearance in the distal oesophagus. No other abnormality was identified (figure A). The patient did not have any symptoms of dysphagia or retrosternal pain. A single contrast barium examination of his oesophagus confirmed a spiral staircase peristalsis and an absence of peristalsis in the oesophageal body. CT of the mediastinum was done, and virtual endoscopy of the oesophagus showed the typical feature of corkscrew oesophagus (figure B). Although manometry might be necessary to diagnose corkscrew oesophagus, but it was not recommended to this patient because his corkscrew oesophagus had been diagnosed, without any previous symptoms. In the future, our patient will need to be treated with drugs such as muscle relaxants and anxiolytic agents, in conjunction with either antireflux therapy or surgical myotomy.

What is the symptom of this condition can be worsened by?

a. Exercise
b. Coughing
c. Cold fluids
d. Antidepressants

Reference: *The Lancet* 2011; 377: 667

Problem 2



A 53 years old woman came with the complaint of black discoloration of her tongue. 4 weeks before developing the discolouration, she had elective gynaecological surgery, from which she was recovering as an inpatient under care. During the course of her hospital stay she completed a 3 week course of amoxicillin clavulanate and metronidazole for a suspected postoperative pelvic infection. Tongue scrapings confirmed Candida infection, and diagnosed the patient with lingua villosa nigra (black hairy tongue) caused by a Candida infection secondary to antibiotic use. It is characterised by hypertrophy and elongation of filiform papillae and lack of normal desquamation. The discolouration is thought to be due to secondary infection with porphyrin producing chromogenic bacteria or yeast. It is characteristically confined to the posterior two-thirds of the tongue, and generally causes no symptoms. This patient was treated with a short course of fluconazole and her tongue returned to normal within 7 days.

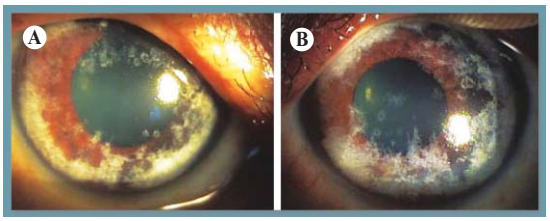
This appearance is more commonly seen in people who:

a. Drink tea or coffee
b. Smoke
c. Have been taking antibiotics
d. All of the above

Reference: *The Lancet* 2011; 377: 1183

Problem 3

A 45 years old woman presented with a 6 months history of gradual visual loss in both eyes. Her best corrected visual acuity was 20/30 in both eyes. Slit-lamp examination showed bilateral predominantly peripheral corneal deposits of numerous minute, crystalline materials (figure A and B) like as corneal snow flakes. The remainder of the ocular examination was unremarkable. Serum IgG concentration was 30.3 g/L (normal 8.1-16.9 g/L) and serum electrophoresis was done.



What may be the probable diagnosis?

a. Keratitis

b. Multiple corneal foreign bodies

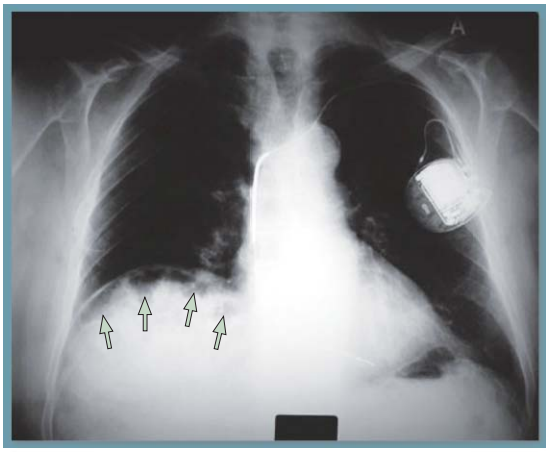
c. IgG-kappa monoclonal gammopathy

d. Corneal granular dystrophy

Reference: *The Lancet* 2012; 380: 506

Problem 4

A 79 years old man presented with symptoms and signs of upper respiratory tract infection; he had a history of permanent pacemaker implantation. An upright postero - anterior chest radiograph showed a raised right hemi-diaphragm delineated by subdiaphragmatic air. Unlike free air, which forms an uninterrupted crescent-shaped subdiaphragmatic radiolucency, this radiograph showed a haustral pattern of subdiaphragmatic lucency (figure), overlapping the upper border of the liver shadow. On examination, clinical findings suggesting acute abdomen from rupture of a hollow viscus were absent and there was no recent history of abdominal surgery to account for the presence of subdiaphragmatic air. On a chest film, there is visualization of a gas filled transverse colon lumen interpositioned between the right hemidiaphragm and the liver. A CT scan may confirm these anatomical relations. In this patient's radiograph, the haustral pattern of air was indicative of colonic origin, and the continuity of the subdiaphragmatic air was broken up by the shadow of the vertical plicae semilunares of the colon. This patient was treated only for his upper respiratory tract infection.



What may be the probable diagnosis?

a. Ruptured bowel

b. Chilaiditi syndrome

c. Subdiaphragmatic abscess

d. Recent laparoscopic surgery

Reference: *The Lancet* 2009; 373: 836

Please see the answers Page 19

First bionic hand with a sense of touch

Using a bionic hand to grip an object, blindfolded Dennis Sorensen can tell from how it feels it is a plastic cup. This astonishing feat was made possible as he is the first person to have a prosthetic hand fitted which has a sense of touch. Dennis, 36, who lost his left hand in a firework accident nine years ago, said it was "quite amazing" to suddenly be able to feel things again. The incredible technology uses sensors in the prosthetic device to pick up information about touch. This data is then converted into impulses which his nerves can interpret. The signals are sent through wires into four electrodes that were surgically implanted into what remains of Dennis's arm nerves.

Dennis is Danish but lives in Rome which is where he had the ground breaking surgery in January, 2013. Doctors from the Swiss Federal Institute of Technology put the sensors in the bionic hand before it was attached to Dennis for four weeks. Experts at the University of Freiburg, Germany, designed the electrodes that made it possible to relay electrical signals directly into his nervous system. Due to safety rules during clinical trials, Dennis has had the electrodes and new hand removed. But he hopes he will soon be able to enjoy the sense of touch in his left hand all the time. Wearing a blindfold and earplugs, Dennis was able to detect the shape, size and feel of objects he picked up. He was the first patient in the world to test the bionic hand as part of a study published on February 5, 2014 in the Science Translational Medicine journal.

Excited scientists said the pioneering technology could eventually work in all prosthetic limbs and change the lives of millions of amputees. Scientists are now working to improve the sensitivity of the bionic device and to complete further tests before recommending its use worldwide.

Jake Gladstone born with half of his brain missing

Beaming Jake Gladstone looks like any other four years old as he plays happily in the garden. But this little boy has been defying medical predictions since he was born with nearly half his brain missing. Jake was six months old when the rare condition was discovered and doctors warned his parents to be prepared for him never being able to walk or talk. Yet just before his first birthday Jake pulled himself up and managed to shuffle around the family home. A year later he took his first tentative steps and soon uttered his first words. His mother said that it was just unbelievable. When they looked at Jake's X-rays they have seen the big space where half of his brain had died off. But now he's full of energy and runs around just like other children his age. He is behind in his speech, but other than that he can walk and run too. He's a little miracle.

Jake was born at the Hull and East Yorkshire Women and Children's Hospital in September 2009. When he was a week old he went floppy and was rushed back to hospital but doctors thought he had a picked up a virus and sent him home. Six months later his mother noticed he wasn't using his right arm. His hand was constantly clenched. Then she consulted with her family doctor who referred him to hospital for an MRI scan. A week later specialists told his parents the bombshell diagnosis that Jake had cystic encephalomalacia. Doctors believe Jake had a stroke in the womb that stopped oxygen being supplied to his brain. Cysts developed where it had been damaged.

But despite his illness, Jake's parents have been able to watch him reach the magic moments all parents treasure and they were delighted by his progress, especially as Jake had also been diagnosed with epilepsy. Jake takes medication for his small epileptic fits and his speech is continuing to improve as he grows older.

Paediatrician from The Children's Trust, which specializes in youngsters with brain injuries, commented as this is usually a devastating disease. He said that this little boy has done remarkably well which is due to one side of his brain being healthy. It has retrained itself to compensate for the side which doesn't work, allowing him to do the things he does. Jake has to be constantly watched because of his epilepsy and needs help getting dressed and eating and he surprises everyone in each day with how well he is doing.

Reference: http://www.mirror.co.uk

Medical Jokes

I have good news and bad news

Patient : I'm in a hospital! Why am I in here?
Doctor : You've had an accident involving a bus.

Patient : What happened?
Doctor : Well, I've got some good news and some bad news. Which would you like to hear first?

Patient : Give me the bad news first.
Doctor : Your legs were injured so badly that we had to amputate both of them.

Patient : That's terrible! What's the good news?
Doctor : There's a guy in the next ward who made a very good offer on your slippers.

Benefits of having Alzheimer's disease

5. You never have to watch reruns on television.
4. You are always meeting new people.
3. You don't have to remember the whines and complaints of your spouse.
2. You can hide your own Easter eggs.
1. Mysteries are always interesting.

How much will this cost me?

Patient : How much to have this tooth pulled?
Dentist : Tk.10,000.00

Patient : Tk. 10,000.00 for just a few minutes work?

Dentist : Well, I can extract it very slowly if you like.

A doctor is complaining to a mechanic

A doctor is talking to a car mechanic, "Your fee is several times more per hour then we get paid for medical care."

"Yeah, but you see, doc, you have always the same model, it hasn't changed since Adam; but we have to keep up to date with new models coming every month."

Can I play the piano once these are off?

A doctor has come to see one of his patients in a hospital. The patient has had major surgery to both of his hands.

"Doctor," says the man excitedly and dramatically holds up his heavily bandaged hands. "Will I be able to play the piano when these bandages come off?"

"I don't see why not," replies the doctor.

"That's funny," says the man. "I wasn't able to play it before."

Answers of Diagonosis at Glimpse

1. **Symptoms of this condition can be worsened by?**
   Ans: (c) Cold fluids
2. **This appearance is more commonly seen in people who:**
   Ans: (d) All of the above
3. **What may be the probable diagnosis?**
   Ans: (c) IgG-kappa monoclonal gammopathy
4. **What may be the probable diagnosis?**
   Ans: (b) Chilaiditi syndrome

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