

Infectio

A quarterly Magazine

2nd Issue, April 2014

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Prof. Abdul Gaffar Billoo
in next issue

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Current News

Polio in Pakistan

- Two new WPV1 cases were reported in the past week, one from Peshawar, Khyber Pakhtunkhwa with onset of paralysis on 31 December, 2013 and one from North Waziristan, FATA with onset of paralysis on 4 January 2014. The total number of WPV1 cases for Pakistan in 2013 is now 92. The total number for WPV1 cases for Pakistan in 2014 is now 5. The most recent WPV1 case had onset of paralysis on 5 January (from North Waziristan, FATA).
- Two new cVDPV2 cases were reported in the past week, both from North Waziristan. The total number of cVDPV2 cases is 45 for 2013 and one for 2014. The most recent cVDPV2 case had onset of paralysis on 3 January (from North Waziristan).

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Introduction

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Message of the Chairman/Head of Project

Infectio

The response to our inaugural issue of the quarterly "*Infectio* magazine" has been overwhelmingly positive. We look forward to continue to provide you with latest news & information about infectious diseases that may be of interest to you.

In the first issue, we focused on topics regarding Congo fever, Cholera, Naegleria & adult immunization schedule. Expanded immunization has contributed significantly for control of infectious disease but recent measles epidemic has exposed some shortcomings in the program.

The polio is still with us and efforts to eradicate it requires comprehensive struggle against social stigma, religious bigotry and organizational problems.

There is need to disseminate information on control and management of infectious diseases. Current issue contains articles by leading experts on Community Acquired Pneumonia, Measles & use of antibiotics in Pakistan. Additionally this issue contains highlights of ICON-2014, especially the use of antibiotics.

Antibiotic stewardship is not well established in routine practice. There is a need to disseminate information on this issue.

Lastly, I congratulate all winners of first issue, and thank all participants of quiz who read & got latest information through first issue.

I wish this magazine a great success in achieving its aims.

Prof. Dr. Ejaz Ahmed Vohra

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Community Acquired Pneumonia

Professor Badar Jahan Farooqi
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Infectio



Introduction

Community Acquired Pneumonia (CAP) is a pneumonia acquired infectiously from normal social contact, in the community as opposed to being acquired during hospitalization. In CAP, individuals who have not recently been hospitalized develop an infection of the lungs. CAP is a common illness and can affect people of all ages. CAP often causes problems like difficulty in breathing, fever, chest pain, and a cough. CAP occurs because the areas of the lung which absorb oxygen from the atmosphere become filled with fluid and cannot work effectively. CAP is defined as an acute infection of the pulmonary parenchyma. This acute infection is accompanied by the presence of an acute infiltrate on a chest radiograph or auscultatory findings. It is one of the most common infectious disease of the community. It is an important cause of mortality and morbidity worldwide. For about two centuries CAP has been recognized as a common and potentially lethal condition. The incidence was very high in the pre-antibiotic era. The mortality rates of about 1 per 1000 per year. Over 80 percent of the cases were due to *Streptococcus pneumoniae* (*S. pneumoniae*). The mortality rate is generally reported at 20 to 40 percent.^{1,2}

Epidemiology

CAP is the sixth most common cause of death in the world. According to World Health Organization (WHO), it is the leading cause of death worldwide and kills an estimated 1.2 million people which is greater than Acquired Immunodeficiency Syndrome (AIDS), Malaria and Tuberculosis combined.³ The population which usually suffer from CAP include a greater proportion of person greater than 65 years of age, however other factors may also have contributed to a change in the epidemiology of pneumonia. These factors include the fact that a greater proportion of population has underlying medical conditions. The incidence of CAP is highest in winter months.

Etiological agents responsible for CAP

The most common etiologic agent is *S. pneumoniae*. This agent accounts for approximately two third of all cases of bacteremic pneumonia.⁴ Other pathogens include *Haemophilus influenzae* (*H. influenzae*), *Mycoplasma pneumoniae* (*M. pneumoniae*), *Chlamydia pneumoniae* (*C. pneumoniae*), *Staphylococcus aureus* (*S. aureus*), *Moraxella catarrhalis* (*M. catarrhalis*), *Klebsiella pneumoniae* (*K. pneumoniae*), *Legionella Pneumophila* (*L. pneumophila*), and other gram-negative rods.

Viruses included are *Influenza virus* (depending on the time of year), *Respiratory syncytial virus*, *Adenovirus*, *Parainfluenza virus*. The frequency of other etiologies, e.g., *Chlamydia psittaci* (*C. psittaci*), *Coxiellaburnettii* (*C. burnettii*), *Francisella tularensis* (*F. tularensis*) and endemic fungi (histoplasmosis, blastomycosis, and coccidioidomycosis), is dependent on specific local epidemiological factors.

Clinical features

Symptoms suggestive of pneumonia include fever combined with respiratory symptoms such as cough, sputum production, pleurisy, and dyspnea. Similar symptoms may be caused by acute bronchitis, sinusitis, and a variety of noninfectious diseases. The physical findings include fever in 80 percent of patients, most have a respiratory rate exceeding 20 per minute, crackles are heard on auscultation in 80 percent, and up to 30 percent have signs of consolidation on chest radiograph.⁵

Diagnosis

The patient with CAP usually does not require hospitalization. Prognosis prediction i.e. Confusion, Blood Urea Nitrogen, Respiratory Rate, Blood Pressure, Age ≥ 65 (CURB-65)⁶ should be assessed if hospitalization of patient is needed. The CURB-65 score is given below:

C	Confusion	1 point
U	BUN >19 mg/dl	1 point
R	RR >30/min	1 point
B	BP <90/60 mmHg	1 point
65	Age ≥ 65	1 point

If the score is equal to 1 then no need for hospitalization. If the CURB-65 score is >1 then hospitalize the patient. The higher the score, the higher the mortality.

Baseline assessment

1. Auscultation of chest
2. Chest radiography
3. Sputum gram stain
4. Sputum culture
5. Complete blood count with differential
6. Test for *Mycobacterium tuberculosis* (*M. tuberculosis*) with acid fast stain and culture for selected patients, especially those with cough for 1 month, other common symptoms, or suggestive radiographic changes.
7. Test for Legionnaires' disease for selected patients, including all seriously ill patients without an alternative diagnosis, especially if 40 years of age, immunocompromised, nonresponsive to beta-lactam antibiotics.
8. Tests for *M. pneumoniae* and *C. pneumoniae* (not routinely recommended because of limitations in sensitivity, specificity, and availability)
9. Induced sputum (recommended for detection of *M. tuberculosis* or *Pneumocystis carinii*)

Sputum sample should be a deep cough specimen obtained before antibiotic therapy.

Gram stain should be interpreted by trained personnel and culture should be done only if specimen is adequate by cytological criteria, except for *Legionella* and *Mycobacterium*. Consider diagnostic studies for endemic fungi and *Mycobacterium* when clinical features suggest these diagnoses.

Serological tests would include those for *M. pneumoniae*, *L. pneumophila*, *C. pneumoniae*, or other organisms (i.e., viruses, *C. psittaci*, or *C. burnetii*), depending on the circumstances.

Treatment

• Empirical Antibiotic Treatment

Macrolides (Erythromycin or Clarithromycin or Azithromycin). Fluoroquinolones (Levofloxacin, Moxifloxacin or another respiratory fluoroquinolone with enhanced activity against *S. pneumoniae*).

• Alternative options

Amoxicillin/clavulanate

Treatment of CAP according to pathogens⁷

• *S. pneumoniae*

Empirical Selection of Antibiotics

Fluoroquinolones, Clindamycin, Vancomycin.

Cephalosporins (e.g. Ceftriaxone), Penicillin or Amoxicillin (on the basis of Minimum Inhibitory Concentration), Macrolides.

• *H. influenzae*

Second or third generation Cephalosporins (e.g. Ceftriaxone), Azithromycin, beta-lactam-beta-lactamase inhibitor, (combinations) Fluoroquinolones.

• *M. catarrhalis*

Second or third generation Cephalosporins (e.g. Ceftriaxone), Macrolides, Fluoroquinolones, Amoxicillin/clavulanate.

• *S. aureus*

Cloxacillin, Clindamycin, Fluoroquinolones.

• *Pseudomonas aeruginosa*

Antipseudomonal beta-lactam (*P. aeruginosa*) (Piperacillin/Tazobactam, Ceftazidime, Aztreonam, Cefepime), Ciprofloxacin.

• *L. pneumophila*, *M. pneumoniae* and *M. pneumoniae*

Macrolides, Fluoroquinolones.

Prevention

The annual impact of CAP is highly variable; during winter season when Influenza is epidemic, its impact on the frequency of CAP is sizeable as a result of both primary Influenza pneumonia and secondary bacterial pneumonia. Influenza vaccine is effective in limiting severe disease caused by Influenza virus⁸, and it is recommended that the vaccine be given annually to persons at increased risk for complications as well as to healthcare workers.⁹ Its efficacy tends to decline with age and may be negligible in immunocompromised hosts. It must be borne in mind that the Pneumococcal vaccine consists of a mixture of antigens designed to prevent 23 immunologically distinct serotypes, the aggregate efficacy of which cannot be equal to that of a monovalent vaccine. There is no contraindication for use of either Pneumococcal or Influenza vaccine immediately after an episode of pneumonia (i.e., before discharge from the hospital). The vaccines are inexpensive and can be given simultaneously. In addition to treating any underlying illness which can increase a person's risk for CAP, there are several additional ways to prevent CAP. Centre for Disease Control and Prevention (CDC) recommends that vaccines be offered to persons older than 50 years, residents of extended-care facilities, and patients who have chronic heart and lung disorders, chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunosuppression.¹⁰ Smoking cessation is important not only for treatment of any underlying lung disease, but also because cigarette smoke interferes with many of the body's natural defenses against CAP. Respiratory hygiene measures, including the use of hand hygiene and masks or tissues for patients with cough, should be used in outpatient settings and Emergency

Departments as a means to reduce the spread of respiratory infections.

Prognosis

CAP acquired by Pneumococci has been associated to carry a mortality rate of 12%.¹¹ Fever typically responds in the first two days of therapy and other symptoms resolve in the first week. The x-ray, however, may remain abnormal for at least a month, even when CAP has been successfully treated. When CAP does not respond as expected, there are several possible causes. A complication of CAP may have occurred or a previously unknown health problem may be playing a role. Additional causes include inappropriate antibiotics for the causative organism, a previously unsuspected microorganism such as tuberculosis, or a condition which mimics CAP such as Wegener's granulomatosis. Additional testing may be performed and may include additional radiologic imaging such as a computed tomography scan or a procedure such as a bronchoscopy or lung biopsy.

Conclusion

In conclusion, although the mortality is low in CAP, some deaths could have been prevented, and it is probably possible to influence the course of the disease in the survivors. Pneumococcal vaccination should be used since *S. pneumoniae* is the predominating cause of CAP especially vaccination of the elderly and immunocompromized people should be considered.

Intensified observation and treatment is indicated in patients having atypical presentation of the pneumonia or with high respiratory rate and findings on Chest radiograph. The patients' nutritional status should be assessed, surveillance of CAP should be increased and finally, there is probably much to be gained by improved prevention of infections.

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Emerging Epidemic of Antibiotic Resistance in Pakistan

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Perhaps man has not had sufficient time to celebrate his feats of victory over germs. It has only been less than a century, since the birth of first antibiotic, and already the resistance to antimicrobials has spread at an alarming rate. It is a matter of great disappointment that much of this resistance has been contributed by unchecked use and over-reliance on antibiotics. World Health Organization, Center for Disease Control United States and other health authorities are busy in planning strategies to control this threat throughout the world.

Pakistan is a developing country with a huge burden of infectious diseases. Our country lacks a national level surveillance system for infectious disease reporting and resistance patterns. Over the last fifteen to twenty years numerous studies have pointed out the increasing resistance to antibiotics both in outpatient and inpatient setups. Methicillin-resistant *Staphylococcus aureus*, Vancomycin-resistant *Enterococci*, Extended-spectrum beta-lactamase-producing *Enterobacteriaceae* and drug-resistant *Acinetobacter* are terrorizing the hospital-based medicine. 28-47% of tuberculosis cases have been reported to have multi-drug resistance. Community-acquired pneumonias and infectious diarrheas are also losing their susceptibility to traditional medicine. 64% of *Salmonella typhi* strains have been reported to have quinolone resistance while 48% have developed multi-drug resistance.

The reasons for this drastic situation in Pakistan are far too many. Patient demand for antibiotics, self-medication, inadequate infection control policies, lack of isolation units, blind-prescriptions, over-reliance on broad-spectrum antibiotics and

over-influence of pharmaceutical industry are just a few causes amongst a long list. Moreover there are no estimates for the use of antimicrobials in animals and agriculture.

In this situation, it can be safely estimated that the health costs and expenditures are going to increase. It becomes a responsibility of every doctor and health professional to take measures to control this epidemic of resistant organisms. Measures should be taken to minimize spread of infectious diseases and to ensure proper use of antibiotics in appropriate situations. General practitioners have a particularly important role to play as they are the first level of contacts with community infections. General practitioners should keep their knowledge up-to-date. Antibiotics should be prescribed to patients only with evidence of infection and if possible cultures should be sent. Patient pressure for antibiotic prescription should be discouraged and doctors should take time to properly educate their patients regarding antibiotics. Practitioners should make it a habit to report unusual resistance patterns. A national level surveillance system should be established and strict infection control policies should be adopted.

Only through a properly focused drive for antibiotic stewardship, can we ever hope to achieve control of antibiotic resistance spread.

In the words of Roman philosopher Marcus Tullius Cicero:

“The enemy is within the gates; it is with our own luxury, our own folly, our own criminality that we have to contend.”

INTRODUCTION

Measles is one of the most contagious infectious diseases in humans and is a major contributor to child mortality worldwide. It accounts for an estimated 164,000 deaths per year globally. Measles has become a threat to public health as it has recently caused sporadic outbreaks all over the world including Pakistan. Pakistan witnessed measles outbreak/epidemic (particularly in the province of Sindh) and from January 2012 to 2nd February 2013, 19,048 suspected measles cases with 463 deaths of children were reported throughout the country. Most of these cases were reported during the last quarter of 2012. Control of Measles has become a growing challenge despite widespread vaccine availability.

TRANSMISSION

Measles is an RNA virus and is transmitted primarily from person to person by means of respiratory droplets or small aerosolized particles. Peak transmission occurs in the late winter and early spring. The incubation period is approximately 10-12 days following exposure.

CLINICAL MANIFESTATIONS

Initial symptoms include fever and the 3Cs, cough, coryza, and conjunctivitis. During this time, pathognomonic Koplik spots also may appear on the buccal mucosa. The rash develops after 2-4 days. It is characteristically erythematous, maculopapular and usually begins behind the ears on the face and spreads to the trunk and extremities before fading, sometimes with desquamation, after 3-7 days. Most cases resolve completely but approximately 40% of infected individuals (especially infants and malnourished young children) develop complications.

COMPLICATIONS

The complication associated with the most mortality is pneumonia, owing either to the measles virus or to a secondary viral or bacterial infection. Other complications include Otitis media and diarrhea. Vitamin A deficiency can develop and lead to keratoconjunctivitis and subsequent blindness. Central nervous system (CNS) complications occur rarely but are associated with significant morbidity and mortality. Acute measles encephalitis and subacute sclerosing panencephalitis (SSPE) are the most devastating CNS complication; a consequence of persistent measles virus.

DIAGNOSIS

Diagnosis is based on clinical presentation. Laboratory confirmation can be done in doubtful cases using serology testing for Measles specific IgM and IgG titres.

MANAGEMENT

Supportive measures including rehydration and Vitamin A supplementation. Prompt recognition and treatment of superimposed bacterial infections is needed to prevent significant morbidity and mortality.

PREVENTION

Measles is a vaccine preventable disease. In Pakistan, as per vaccination program, two doses of Measles vaccine are given to children. The first dose of Measles vaccine should be given at 9 months of age and the second dose should be given in the second year, preferably at 15 months of age. For the second dose, MMR vaccine can be used instead of Measles vaccine. Some adults should also get MMR vaccine: Generally, anyone 18 years of age or older who was born after 1956 should get at least one dose of MMR vaccine, unless they can show that they have either been vaccinated or had all three diseases. Post exposure prophylaxis is indicated within 72 hrs of exposure and all those who are non-immune should receive 2 doses of MMR. However those who are pregnant or immunocompromised can only be considered for human normal immunoglobulin for post exposure prophylaxis as the vaccine is live attenuated vaccine.

CONCLUSION

Measles is a major cause of mortality especially in children and focus should be on prevention via mass vaccination campaigns and awareness among general population.

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Highlights of Infectious Diseases Session in ICON-2014

Reported by:
Dr. Muhammad Salman

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KARACHI: The first infectious diseases session of the 2nd Biennial conference ICON-2014 for consultants & family physicians was held on January 25, 2014 at Marriott, Karachi. Physicians from several disciplines attended the Antibiotic Stewardship (AS) seminar at the ID session of ICON 2014.

Dr. Naseem Salahuddin opened the discussion by her comments on the importance of losing the use of antibiotics due to rising drug resistance. Dr. Altaf Ahmad introduced AS in a humorous manner but with a firm warning that we will be left with no new armamentarium to combat infections if misuse of antibiotics continues. Dr. Faisal Mahmood from AKUH and Dr. Faisal Sultan from SKMH shared their experiences of AS in their respective institutions, and encouraged other hospitals to individualize their own policies according to their situations. The first step in introducing AS in any institution is to have full backing from the administration. Dr. Sobia Qazi, ID consultant at Services Hospital Lahore and Dr. Farheen Ali, ID consultant at AKU presented case studies and quizzed the audience on appropriate antibiotic management.

Dr. Ejaz Vohra who chaired the session concluded that awareness of AS should henceforth be spread in the community and in hospitals, paving the way to prudent use of antimicrobials.

The global challenge of antibiotic resistance is enormous, with almost all countries and regions being affected, including Pakistan. Antibiotic misuse and overuse have contributed tremendously to this major health crisis. As an array of newer super bugs, such as carbapenem resistant *Klebsiella pneumoniae*, MRSA, NDM1, MDR TB spread in

healthcare and community settings alike, the race to contain them has taken center stage at many forums. The reasons for this urgency are the increasing drug resistance in many healthcare settings with higher morbidity, mortality and costs. We no longer treat urinary tract infections with the same ease as we once did; treating typhoid has become difficult, as we are now forced to use parenteral antibiotics; we are seeing pan resistant bugs in ICUs, growing out of catheters, lungs and IV lines. Most importantly, MDR TB is a devastating disease of frightening proportions.

The ultimate goal of AS is the preservation of current and future antibiotics against the threat of antimicrobial resistance with improving patient safety and reducing healthcare costs. It requires teamwork with ID specialist, clinical microbiologist, pharmacist, and Infection Control nurses.

Antibiotic stewardship is defined as "An ongoing effort to optimize antimicrobial use in order to improve patient outcomes, ensure cost effective therapy, and reduce adverse sequelae of antimicrobial use and drug resistance."

Medical Microbiology and Infectious Diseases Society of Pakistan (MMIDSP) plans to address AS at both institutional and community levels. MMIDSP welcomes all health care givers to join in prescribing rational use of antibiotics.

We would like to specially thank Prof. Naseem Salahuddin for her help and support in manuscript preparation

Face to face with Prof. Dr. Syed Jamal Raza

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Interviewed by Dr. Muhammad Salman

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The human life on earth is full of pleasures and sorrows, ups and downs, strength and weakness and health and illness like day and night. These happenings are inherent in everyone's life. But it is a silver lining that there are noble people who work all their lives to mitigate the sufferings of others. Among them, the profession of doctors is perhaps most respected for service to the society.

Prof. Dr. Syed Jamal Raza is a great name in the field of Pediatrics, especially Pediatric Endocrinology in Pakistan. He did his MBBS from Dow Medical College (Now Dow University of Health Sciences) in 1985, and FCPS from CPSP Pakistan in 1992. Then he went to London for further studies where he completed his MRCP. After coming back to Pakistan, Dr. Raza served in NICH as a consultant Pediatrics Endocrinologist. Now Dr. Raza is a Professor and Director at NICH which is a prestigious Pediatrics institute of Pakistan. He is also a member of many well-regarded national and international organizations like Endocrine Society USA, ISPAD, PES Pakistan and also serves as the General Secretary of Pakistan Pediatric Association (PPA). He is also the Founder/President of an NGO (ATFAAL Welfare Society & Child Growth Society of Pakistan) that works for the welfare of poor diabetic people of Pakistan.

Q. No.1- Please tell us about yourself?

I was born in 1961 in Karachi. I am presently Professor of Paediatrics/Endocrinologist and also Director NICH, Karachi since 2009.

Q. Please tell us about your basic education & professional experience. What are your specialties/expertise?

I have completed my school education from Gulistan School, Sindh Muslim Society, Karachi and did my intermediate from National College Karachi. After doing intermediate I enrolled at Dow Medical College Karachi to pursue degree of medicine (M.B.,B.S.). Afterwards, I completed my fellowship from CPSP Pakistan in 1992. Furthermore, I received my Membership (M.R.C.P) from Royal college of Physician London, UK in 1995.

I had keen interest in Pediatrics Endocrinology/Metabolism, therefore I joined Great Ormond Street Hospital, London and

did my training as a Pediatric Endocrinologist under supervision of Prof. Charles Brook, one of the leading Pediatric Endocrinologists in London and has done great research in this field.

Since Pediatric Endocrinology was a new field in Pakistan then and most of the people did not know about it; I returned to Pakistan with an aim to serve in this ignored field.

Q. No.3- Why did you choose this career (medicine)?

I did not enjoy Mathematics as a subject in my student life and my flair and interest in Biology helped me to choose this noble profession.

Q. No.4- Why did you choose this specialty?

To fulfill my mother's desire; she wanted me to become a child specialist and has always prayed for my success.

Q. No.5- Which area/diseases you want to do further research/work in?

DSD (Disorder of Sex Differentiations), Growth & type-1 Diabetes are always challenging to manage; especially in Pakistan, therefore my further research shall be in those areas.

Q. No.6- Who is your inspiration/role model?

From my school life I have been really impressed by my teachers, which motivated and guided me in every step of life. Prof. Chaudhry Fazal Ellahi (Medicine) and Prof. Mushtaq (Surgery) were my role models while growing up; they were both Professors in Dow Medical College and have been the source of inspiration to fulfill my goals.

Q. No.7- Describe your most successful accomplishments?

I am still working on my achievements; endocrinological disorders are not easily affordable diseases in Pakistan, the diabetes investigations and medicine are very costly and poor men can't afford it. I have been working on these tasks and have established two NGOs called ATFAAL Welfare Society & Child Growth Society of Pakistan (CGS). These are my achievements which give me a sense of accomplishment and I must say that these achievements could not have been possible without the support of my team and the enthusiastic volunteers who have made us realize that we are not alone in our campaign.

Q. No.8- Tell us about objective of ATFAAL Welfare Society?

The ATFAAL Welfare Society was established in 2002, at the National Institute of Child Health, as a non-profit organization dedicated to provide counseling, awareness, patient education, management and treatment to the diabetic patients that regularly attend the endocrine clinics. As already mentioned that investigations and treatment related to endocrinology are very expensive and not within the reach of everyone. ATFAAL Welfare Society provides medicine, glucometer & investigations to all patients free of charge or at the lowest possible subsidized rates. The slogan

of ATFAAL Welfare is "Treatment for all!"

Q. No.9- What about the objectives of Child Growth Society of Pakistan?

The CGS was established in 2001 in Karachi. The aim of this unique union between the leading Pediatricians and Endocrinologists of Pakistan was to properly diagnose and treat short stature in Pakistani children. Since then CGS has blossomed from a dream into a reality and has now become a full fledged working NGO that also provides counseling, relief to the patients and their families, general awareness among the population of Pakistan, education in training specialist doctors and treatment at discounted rates.

The treatment of growth hormone deficiency is very expensive but CGS is providing growth hormone injections at a discounted rate through special arrangement with the manufacturing companies. In between; relief is provided to the families time and again so that the long and expensive treatment is not left due to financial restraints. One of the future goals of CGS is to provide this treatment free of charge to all Growth Hormone Deficient (GHD) patients.

Q. No.10- If you were not a doctor then what would you have been?

I was so focused and committed to becoming a doctor that I did not think in any other direction.

Q. No.11- What are the rewards for you in your work?

As a Professor I have trained different PGs, fellows & Pediatricians who are working in Pakistan & other countries as Consultant Pediatricians. These are my rewards from my work.

Q. No.12- What advice can you give to people who want to follow your path?

I would like to see more doctors from Pakistan choosing to become Pediatric Endocrinologist; recently we have approached CPSP for approval of Pediatric Endocrinology as a subspecialty of fellowship program. If new doctors want to come and serve in this specialty they should work hard and perform their duties sincerely.

Quiz

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Choose the correct answer:

Regarding CURB65 score, which one of the following is true:

- a) If score is 1, patient should be admitted
- b) B mean blood pressure <100/80
- c) Higher the score higher the mortality
- d) R mean respiratory rate <25

The most common pathogen in pneumonia is:

- a) Mycoplasma pneumoniae
- b) Legionella pneumophila
- c) Staphylococcus aureus
- d) Streptococcus pneumonia

What is true regarding measles prevention?

- a) The first dose should be given at 10 months of age
- b) The second dose should be given at 3 years of age
- c) Post exposure prophylaxis is indicated within 90 hours
- d) Pregnant women can only be considered for human immunoglobulin

What is included in the empirical therapy of Haemophilus influenzae ?

- a) Vancomycin
- b) Ceftriaxone
- c) Cloxacillin
- d) Clindamycin

Winners of quiz lucky draw

Reported by Dr. Muhammad Salman

The editorial board of Infectio magazine is pleased to announce the names of winners of quiz from the first issue. The lucky draw was held in a clinical meeting at Dr. Ziauddin University Karachi on February 19th, 2014. Following are the names of lucky draw winners drawn at random by Prof. Ejaz Ahmed Vohra and his team.

We congratulate the winners and once again thank all contestants for their participation in quiz

1. **Maj. Dr. Aurang Zeb** CMH-Hospital, Peshawar
2. **Asst. Prof. Dr. Aneela Ambreen** Naseer Teaching Hospital, Peshawar
3. **Dr. Anwar Kamal** Medical Unit; Lady Reading Hospital, Peshawar
4. **Dr. Rabia Bashir** Pediatric ward; Nishtar Hospital, Multan
5. **Dr. Muhammad Amir** Pediatric ward; THQ, Gujar Khan

