Antibiotic Sensitivity Patterns of Acinetobacter Species Isolated from Various Clinical Samples

Sir,

*Acinetobacter* species are Gram-negative cocccobacilli that are wide spread in the environment. Till recently, these organism were considered to be of low pathogenicity, but recently, they have assumed importance as nosocomial pathogens.1 2

Our aim was to analyse the incidence of *Acinetobacter* infections in our hospitals and to find out the antibiotic sensitivity pattern of these isolates.

The study was conducted from January 2001 to June 2001. Only in-patients with evidence of hospital-acquired infection were included. Patients with evidence of community-acquired infections were excluded. Specimens such as sputum, tracheal aspirate, pus, blood, CSF and urine were examined. The sputum was first screened, so that only those of good bacteriological quality were included. All samples were cultured on blood agar and MacConkey’s agar. The organism was identified by standard microbiological methods.3 The organism was considered as the significant pathogen if the Gram smear showed numerous pus cells and the culture had a predominant growth of *Acinetobacter*.

A total of 151 isolates of *Acinetobacter* spp. were obtained. Maximum isolated were from urine: 42 (27.8%). Thirty eight (90.47%) of these patients had an indwelling catheter. Thirty three (21.8%) isolates were obtained from blood; of these, 20 were from paediatric age group. This shows that it is an important cause of bacteremia in hospitalised children. In all, 84 (55.6%) of the *Acinetobacter* were from children. 25 isolates were from tracheal aspirates, 18 from pus and 12 from sputum. Eight isolates were from the CSF, seven of whom were children with some underlying CNS pathology for which surgery was performed. In adults, respiratory tract was the main source of bacteremia. *Acinetobacter* spp was isolated from sputa of 11 of the 13 adults with bacteremias.

In most, *Acinetobacter* spp was the single organism obtained. In 28 (18.54%) it was associated with other pathogens. It was most commonly associated with Staphylococcus aureus.

The commonest species of *Acinetobacter* was *Acinetobacter baumannii* 98 (64.90%) followed by *Acinetobacter baumannii* 53 (35.1%).

The *Acinetobacter* species were resistant to most antibiotics. The most effective antibiotic was amikacin, 56.29% being sensitive.

Hence, *Acinetobacter* spp significantly contributes to nosocomial infection. Most of these are multidrug resistant posing a challenge to clinicians and microbiologists.
Sir,

A HIV seropositive patient presented with bilateral pleural effusion. The effusion was markedly different in their characteristic: right sided staphylococcal empyema and left sided clear lymphocytic predominant tubercular effusion. To the best of our knowledge, there are no cases of this type reported in the modern literature and this is probably the first case of this type in HIV seropositive patient. The importance of bilateral diagnostic thoracocentesis in immune compromised patients is also emphasized.

Bilateral pleural effusion usually have a common etiology and similar fluid characteristics. Rarely bilateral pleural effusion may have a different etiology. This condition is known as Contarini’s condition - a reference to the 95th Doge of Venice, who died in 1625 with orthopnoea, foul smelling sputum, cardiac arrythmia and clear pleural effusion on one side and pus on other.1

The present report describes Contarini’s syndrome in a young male patient due to its rarity in modern literature and probably first occurrence in a HIV seropositive.

A 23 years male smoker presented with fever, cough, breathlessness on exersion and mild chest pain of two weeks duration along with weakness and weight loss.

His past medical history was negative. He was truck driver and had history of frequent extramarietal unsafe roadside sex.

On examination patient was ill with pallor, halitosis and oral thrush. There was no jaundice, clubbing, lymphadenopathy or pedal edema. Examination of the respiratory system revealed findings suggestive of bilateral pleural effusion. Cardiovascular, genitourinary and central nervous systems were normal on clinical examination.

Skiagram chest PA view showed bilateral pleural effusion. Ultrasonography also revealed bilateral pleural effusion, more on the left side but no abnormality in abdominal or pelvic organs.

Investigations of the patients revealed haemoglobin 8 gm%, total leucocyte count 3800/mm³, differential count - polymorphs 60%, lymphocytes 37%, monocytes 2%, eosinophills 1%, ESR 60 mm in first hour with normal blood sugar and serum electrolyte levels. Liver function tests and renal function tests were also normal. His sera was positive for HIV1 and HIV2 testing by Elisa method (test kits used were Immuno comb and Cappilas) and further confirmed by Western blot test. He was VDRL negative.

Mantoux test using 5 TU was positive but sputum smear was negative for acid fast bacilli on three consecutive days.

Thoracocentesis was done first from the left side and 1200 ml of clear straw coloured fluid was aspirated under local anaesthesia. Biochemical analysis of the fluid revealed - protein’s 5.3 gm%, sugar 66 mg%, chloride 108 meq/L and WBC 3200/mm³ with lymphocyte predominence. Pleural fluid smear was positive for acid fast bacilli and found sterile on culture for pyogenic organisms. Patient was put on antituberculous chemotherapy.

Two days later, thoracocentesis was performed on right side which revealed frank pus. Pus smear was full of pus cells

Contarini’s Syndrome in a HIV Positive Patient

Sir,

A HIV seropositive patient presented with bilateral pleural effusion and high viscosity due to sucrose in IVIG. The acute renal failure could be related to the sucrose in the immunoglobulin, because the renal functions prior to starting to therapy was normal and came down to normal after therapy stoping therapy. Thereby suggesting that the acute renal failure could be related to the therapy.

Sucrose or cane sugar is a naturally occurring disaccharide of D-glucose D-fructose joined in covalent linkage. When given intravenously to human with normal renal function, hydrolysis dose not occur and 100% of intravenous dose recovered in the urine with 24 hours. This could lead to prolonged exposure of the tubular epithelium of effects of sucrose in patients with renal insufficiency.

Support for the association of the agent and renal failure is the fact that the majority of reported patients developed the disorder after receiving sucrose containing IVIG. It would seem prudent at this time to avoid the use of sucrose containing IVIG preparation in-patient with preexisting renal impairment. If this cannot be accomplished due to the recent shortage of IVIG product, the infusion time lengthened. Monitoring of renal function impairment in all patients receiving a sucrose containing IVIG preparation is essential.

PN Renjen*, K Ahamed**, A Kumar***

*Senior Consultant; **Associate Consultant; ***Junior Resident;
Department of Neurology, Indraprastha Apollo Hospital, Sarita Vihar (Delhi-Mathura Road), New Delhi - 110 004.
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15 years back, Lawton F, Blackledge G, Johnson R. Coexistent chylous and serous pleural effusion with empyema thoracis on right side and subsequently developed condition in a leukemic patient who had protein-rich serous abscess.

In the literature of the 17th century, there is a reference to the presence of effusion of differing character in bilateral pleural effusion. Francesco Contarini, the 95th Doge of Venice, died on Dec. 6, 1625, following a 5 1/2 month illness with fever, emaciation and cough. Shortly before his death, he had orthopnoea, foul smelling sputum and cardiac arrhythmia. At autopsy, the heart was very large and the cavity of the chest contained about five pounds of watery matter. The flaccid right part of lung appeared to be full of thick mucous fluid. The left had turned entirely into a whitish gore contained in the pulmonary tunic as if in a sac. It appears that Contarini suffered from cardiac hypertrophy and, in addition, had both hydrothorax due to heart failure and either empyema or lung abscess.

Textbooks of pulmonary medicine mention that serous pleural effusion may be complicated by secondary infection leading to empyema. Kutty et al. reported Contarini’s condition in a leukemic patient who had protein-rich serous pleural effusion on right side and subsequently developed bilateral pleural effusion with empyema thoracis on right side probably due to aspiration of infected oral secretions. About 15 years back, Lawton et al. reported Contarini’s syndrome in a female with ovarian cancer who developed serous pleural effusion on one side and chylous effusion on other side.

The present case is unique one as there was clear tubercular pleural effusion on left side and staphylococcal empyema thoracis on right side in presence of HIV infection. Our case also suggests that bilateral pleural effusion may have a different etiology in a immunocompromised host. Hence, diagnostic thoracocentesis should always be done on both sides with subsequent analysis in cases of bilateral pleural effusion with underlying immune suppression due to disease or drugs.

HIV infection has changed the epidemiology and clinical characteristics of Mycobacterium tuberculosis disease. Lymphatic and hematogenous tuberculosis are more common and patients often present with atypical radiographs. Pleural effusions and empyema are common presentation in HIV infected persons and are usually parapneumonic or tuberculous in nature. Therefore, clinicians must be aware of their simultaneous occurrence.

R Dixit*, N Joshi**, CL Nawal***
*Ex-Resident; **Assistant Professor; ***Associate Professor, Department of Chest and Tuberculosis and General Medicine, JLN Medical College, Ajmer.
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Bilateral Ptosis Following Wasp Sting

Sir,

I am grateful to Singh RD and his colleagues for reporting an unusual and rare manifestations of envenoming by wasp. Similar phenomenon is observed in elapid bite. Wasp venom contains a cholinesterase. Venom-induced pre-synaptic neuromuscular block is resistant to anti-cholinesterase. Recovery in these victims are by regeneration of new receptors what is experienced in Singh’s case. Wasp stings are left in the skin and should be scraped out as soon as possible to prevent further injection of venom.

Most interesting case being observed by author, admitted in a academic institute, would have helped to literature further by doing a electromyography to confirm the site of neuromuscular block and rational use of anti-cholinesterase therapy.

HS Bawaskar
Bawaskar Hospital and Research Centre, Mahad 402301. Dist. Raigad, Maharashtra.
Received: 27.8.2003; Accepted: 12.7.2004

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Bilateral Ptosis Following Wasp Sting

Sir,

I have read the above case report with great interest and wish to offer the following comments:

As mentioned in the case report the patients “attendant felt that she might have disturbed the wasp nest accidentally in her sleep” and that the authors failed to get any reference

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of ptosis developing after wasp sting.

I would like to mention here that it has been well documented that toxin elaborated by snakes, scorpions, ticks, wasps and bacteria (Cl. botulinum, Cl. tetani) also affect neuromuscular junction producing ptosis. Various pharmacological agents like antiarrhythmics (propranolol, quinidine), anticonvulsants (phenytoin), beta-blockers (propranolol), corticosteroids, antibiotics (neomycin, streptomycin, and azithromycin) and other drugs are also known to produce ptosis and mimic myasthenia.

In this case report there is no mention regarding recovery of wasp or stinging apparatus that can be recovered from the site of sting. Neither detailed investigation to prove wasp sting or rule out other causes of ptosis has been mentioned.

It would be appropriate to mention here that case reports are detailed description of unusual presentation of disease brought to the attention of the medical community and serve different purpose. They are a rich source of hypothesis about disease frequency, risk, prognosis and management and act as surveillance for rare clinical events. Case report help to elucidate mechanism(s) of disease and treatment by reporting highly detailed and methodically sophisticated clinical and laboratory studies of a patient. Another use of case report is to present unusual manifestation of disease. These oddities are simply bizarre aberration from the usual course of events that titillate a lot and reveal little, hence it is particularly susceptible to bias. Case reports often describe joint occurrence of rare events that may occur by chance and may not be biologically related. Therefore case reports based on association should be tested by stronger methods before being believed. The frequency of studies with weak research designs has also increased in three major journals - JAMA, Lancet and NEJM over the past few decades. This trend deserves critical attention.

PL Patil
Associate Professor, Government Medical College, Nagpur.
Received: 10.2.2004; Accepted: 22.7.2004

Reply from the Author
Sir,

Thank you for your letter with comments from my esteemed colleague Dr. HS Bawaskar. I am very greatful to him for his comments. Answers to his comments are as follows:-

1. A generalized comment cannot made on venoms mechanism of action, as different venoms have differing actions. Venoms of even different species of hymenopterans are biochemically and immunologically different. HS Bawaskar has referred to elapid bites in which non-depolarizing competitive post-synaptic ACR block occurs in most of the bites, excepting some bungarus species of krait; that produces presynaptic block and that too, only b-bungarotoxin of these species, while a-bungarotoxin produces post-synaptic block.

2. Recovery by receptor regeneration takes place in case of irreversible block of ACR in which recovery starts after 10th day, as the t 1/2 of ACR is 10 days and so is the turnover time. HS Bawaskar has used the term recovery by receptor regeneration in context of presynaptic block of neuromuscular transmission, but he has not specified which receptors, ACR or voltage-gated calcium channel subunit ligand. If he means to say ACR, then the statement is far from correct and if he means VGCC subunit receptors, that takes even more time to recover. Moreover, not in all presynaptic blockade, recovery occurs by receptor regeneration.

Though in our original article, we had sited the observation of Piek T, who holds the view of presynaptic block, but what is most striking in our case is that recovery was complete at 9th to 19th day of bite. Secondly anticholinesterase appears to play a definite role in our case. Obviously a non-deplorarizing competitive post-synaptic block of ACR appears to be a suitable mechanism in our case.

3. Lastly regarding his suggestion about EMG study to locate site of neuromuscular block, that too is very difficult. Firstly, not simple EMG, but single fibre EMG (SFEMG) is required to show the defective neuromuscular transmission. It does not indicate site of neuromuscular block, whether presynaptic, synaptic or post-synaptic and will be abnormal in all these conditions.

Rather high frequency RNS (repetitive nerve stimulation test) could have helped, but it was not possible in our case, as the patient had no other neurotoxic manifetation except the bilateral ptosis. We are saying this because for doing high frequency RNS in case of bilateral ptosis, oculomotor nerve should be stimulated with recording from LPS and stimulation of oculomotor nerve is technically impossible.

I hope our above explanations are satisfying and sufficient. This is for your kind acceptance and publication in coming issue of JAPI.

RD Singh*, AK Pandey**
*Lecturer; **Associate Professor, Department of Medicine, Patna Medical College and Hospital, Patna.
Received: 24.11.2003; Accepted: 12.7.2004

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Reply from the Author

Sir,

Thank you very much for your letter with comments from PL Patil. I am also thankful to Patil for his interest in our article. We respond to his comments as follows:-

Bilateral ptosis developing after wasp sting is rare in medical literature. We have made extensive search on internet and consulted various books. Secondly, cases of wasp sting are scarce. Thirdly, venoms of different species of hymenopterans differ biochemically and immunologically. Thus, only few species of wasps are expected to produce such pictures. However, if Patil has found some where written in the book of ophthalmology that wasp sting produces ptosis, then we take it as another reference to support our findings.

We do agree that probability of wasp sting was based on circumstantial evidence. The categorical denial by attendants of a possibility of scorpion or snake bite forced us to tilt the evidence in favour of wasp sting. The patient being a female living in pucca house with nest of wasps in the room where she was sleeping and evidence of attendants swearing that they had seen few wasps flying around and also the fact that the patient was very firm in her belief that the pain perceived by her was nothing but a post wasp sting pain leaves us no scope to refute the patient’s side of story and this is what clinical medicine believes in. Finding remains of sting appendages at the site of sting is very rare.

Scorpion stings manifesting neuroparalytic features cause little local swelling, here swelling of right side of face and neck persisted for 36 hrs in our case. As in Indian scorpion BP changes, arrhythmia, pulmonary oedema and features of myocarditis were absent.

Obviously, fang marks and other features of snake venom poisoning were absent.

An young and apparently healthy housewife with no history of any chronic illness or regular intake of any drug in the past rules out the possibility of drugs producing ptosis.

We hope, above facts are satisfying and request to publish it in coming issue of JAPI.

RD Singh*, AK Pandey**
*Lecturer; **Associate Professor, Department of Medicine, Patna Medical College and Hospital, Patna.
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Announcement

The National Haematology Update - IV will be organized by the Department of Haematology, All India Institute of Medical Sciences, New Delhi on February 26-27, 2005.

Registration Fee: Rs. 250/- upto 30 November 2004; Rs. 350/- upto 31 January 2005; Rs. 500/- Spot registration.

For further details contact: Dr. Rajat Kumar, Organizing Secretary, National Haematology Update - IV, Department of Haematology, AIIMS, New Delhi, 110029.
Tel. (011) 2659 4809, 2659 4670. E-mail: rajakr@hotmail.com