



14th World Congress on

Infection Prevention and Control

December 06-07, 2018 | Valencia, Spain

Keynote Forum

Day 1

Infection Prevention 2018

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Francesca J Torriani

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Refocusing on standard precautions and other non-pathogen-specific initiatives to prevent nosocomial transmission of bacterial pathogens in the acute healthcare settings

Prevention of Healthcare Associated Infections has been the focus of Infection Prevention and Quality Initiatives for more than two decades, and multidrug resistant organisms are responsible for many of these infections, further complicating their treatment. In addition to strengthening antimicrobial stewardship practices, and improving adherence to standard precautions (including hand hygiene), contact precautions for patients colonized or infected with multidrug resistant organisms have been recommended and widely adopted to prevent horizontal transmission in the acute care healthcare setting. However, the data supporting these recommendations derives predominantly from epidemic rather than endemic settings, where the burden of transmission as well as the transmission rate is by definition high. Guidelines underscore the importance of a basic multiprong approach that includes education around epidemiologically important organisms, hand hygiene, contact precautions, environmental cleaning and antimicrobial stewardship. Additional measures recommended in the outbreak setting, such as active screening for MDR GNR, MRSA and VRE, alerts for previous positives with pre-emptive CP, and cohorting of patients and staff, etc have also been proposed on occasion. The presenter will discuss the strengths and weaknesses of these strategies when used alone or in conjunction, and will argue that the focus on the primacy of contact precautions in acute care settings is misplaced for most MDR organisms. Alternative focus and practices will be proposed.

Biography

Francesca J Torriani, is a Professor of Medicine in the Division of Infectious Diseases (ID) at the University of California, San Diego (UCSD). She received her M.D. in 1985 from the University Medical School in Lausanne, Switzerland and joined UCSD's faculty in 1995. In addition to her clinical work, she serves as the Medical Director of the UCSD Health IPCE. Dr. Torriani helped create the legislation on HAI and Antimicrobial Stewardship reporting in California. She continues on the Metrics Group for CA HAI Reporting, an independent group of experts on best standards and methods for HAI prevention. She is well published (>75).

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Ionel Victor Pătrașcu

Activeimmunity srl., Romania

Biological products pi-2a II-oral and topical treatment of pediatric psoriasis

Introduction: Psoriasis is a chronic, immune-mediated, inflammatory skin disease, affecting 1–3% of the white population. Although two incidence peaks have been suggested (in adolescence and adulthood), the onset may occur at any age, including childhood (1). Guidelines for pediatric psoriasis treatment are lacking due to side effects of therapies approved for treatment in adult patients. In this study we show that the treatment of psoriasis-affected children with Avian Immunologically Active Proteins (PI-2A) obtained using our patented technology under Romanian brands IMUNOINSTANT and IMUNOVIP (2-4) was followed by impressive resolution of clinical symptoms without reported side effects. PI-2A are a novel class of biological agents that target specific mediators of inflammation as well as antimicrobial resistant (AMR) microorganisms. Multiple studies have confirmed their efficacy in the treatment of psoriasis in adults (3). “Standard” PI-2A contain antibodies against a panel of 22 microbial antigens; they are formulated as sterile solution, sterile spray, granules, ointments, healing oily liquid, healing granules, healing tablets with easily adsorbable collagen VII, sterile yolk suspension. “Personalized” PI-2A are prepared similarly from pathological materials taken from psoriasis plaques of individual patients

Study design: 15 children aged 3 to 12 years presenting severe psoriasis vulgaris were treated with “standard” PI-2A formulated as oral preparations (sterile solution, granules) and topic preparations (healing oily liquid, sterile yolk suspension) during a 3 months session. Subjects were excluded if presenting history of allergic reaction to egg-derived products. Evaluated parameters were: severity of skin lesions, presence and evolution of fingernail pitting.

Results: The evolution of skin and fingernail lesions was favourable for the entire group of studied subjects (Figure 1 shows two representative cases). There were no reports of intolerance or adverse reactions to the oral and topic use of PI-2A.

Conclusion: PI-2A are an important too in the treatment of pediatric psoriasis.





Figure 1. The evolution of clinical signs of psoriasis in two representative cases from the studied patient group treated with PI-2A.

Patient 1: 3 years old child presenting psoriasis signs from the age of 3 months old. Evolution of lesions during a 3 month treatment session.

(A) Inguinal skin lesions; (B) Fingernail pitting

Patient 2: 6 years old child with severe psoriasis. Evolution of lesions during a 3 month treatment session.

(A) Thoracic and abdominal skin lesions; (B) Scalp skin lesions

Recent Publications

1. Napolitano M, Megna M, Balato A, et al. Systemic Treatment of Pediatric Psoriasis: A Review. *Dermatology and Therapy*. 2016; 6(2): 125-142.
2. Pătrașcu Ionel Victor, Composition and Method for Preparing and Evaluating a Complex Immunogen Named I-spga Meant to Produce Immunologically Active Proteins (PIA). Patent Request A 00340 dated 06.06.2017.
3. Pătrașcu Ionel Victor, MVD, PhD. Active immunity by passive immunity. I-spga as a new Immunogen. A Modest Contribution to the Fight Against the Antimicrobial Resistance. SDG Lab, Davos, January 24, 2018; World Economic Forum Annual Meeting 23-26 January 2018, Davos-Klosters, Switzerland
4. Patrascu I.V., Chiurciu V., Chiurciu C., Sima L., Mihai I., The production and use of personalized hiperimmune egg [evopach] in the treatment of psoriasis, OSIM, Patent no. A/00735- 16.10.2015.

Biography

Ionel Victor Pătrașcu MVD, PhD president of Activeimmunity, born on February 7, 1937. Graduated in Veterinary Medicine in Bucharest in 1963. Researcher in the field of virology at Pasteur Institute in Bucharest. Made different specializations in the field of avian and human oncogenic viruses at Houghton Poultry Research Station, Huntington, England, at Friedrich-Loeffler- Institut, Celle, Institute of Animal Pathology in Rotherdam, Netherlands, Cornell University Ithaca NY and Athens University, Athens, GA. USA. In 1971 discovered to extract Fc 126 cell associated as cell free in SPGA and allowed to freeze-dry vaccine anti Marek disease lymphoma. He made the first research Center in the world at Voluntari, Romania, called Avian Tumor Viruses Lab, where specialists from England, U.S., France, Bulgaria, the German Democratic Republic, Hungary, the USSR, and China came to do studies in the period of the Iron Curtain and communist politics from Moscow. In 1989 discovered the largest outbreak in the world of HIV infection and AIDS in children in Romania. Studied antibiotic resistance of microorganisms and made first immunogen I-PC2 used biological preclinical and clinical human studies and the second generation of immunogen I-spga that was managed to prepare IMUNOVIP able to react specifically with superbugs infection by oral treatment of antibiotic-resistant urinary tract infections in women. During 1965-2017 he dealt with the training of specialists who are now valuable researchers, professors and academics.

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14th World Congress on

Infection Prevention and Control

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Sharad Kumar Yadav

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Recent advances in phage display technology

Emergence of prokaryotic and eukaryotic expression system for the use of antibody production in the beginning years of 1980s was a surprise entry for the new era of 'IMMUNOTECHNOLOGY' [a branch of biotechnology that employs sets to bio-technique for the production of immunobiologicals]. Entry of phage display system during the years of 1990s for the antibody fragment expression has been created a bigger achievement and turned into a milestone, which concludes the method of phage display technology for the production of small fragments of antibodies that must possess the quality and the characteristic of binding to the antigens specifically which are popularly and most commonly known as Nanobodies. Phage display technology is a simpler, less time consuming and more efficient approach than the conventional methodology of the antibody production, which contains a number of component for the production of small fragment specific antibodies that includes the target or the antigen in anticipation to the ligand or binder or the antibody which are meant to be produced, next to this it concludes a Phage Display Library, A Phage system, Appropriate Selection or screening process, Appropriate Expression and purification system. The most common bacteriophages used are M13, and FD filamentous phage, though T4, T7 and λ Phage have also been used in some cases.

Biography

Sharad Kumar Yadav has 28 years of teaching and research experience and has served to various senior positions of the University including Registrar of the DUVASU University. He is currently Professor, Head of Department of Veterinary Microbiology, and Director at Cow Research Institute at DUVASU, Mathura India. He has published number of papers in reputed International & National journals and has a vast experience in the arena of BHV-1 virus.

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14th World Congress on

Infection Prevention and Control

December 06-07, 2018 | Valencia, Spain

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Day 2

Infection Prevention 2018

14th World Congress on

Infection Prevention and Control

December 06-07, 2018 | Valencia, Spain



Roberto P Salvino

Asian Hospital and Medical Center, Philippines

Cephalic tetanus in a 57-year old female: A case report

This is a case of a 57-year old female with no known history of immunizations since childhood especially against tetanus who presented with jaw spasm without apparent ear infections or visible bodily injuries and trauma. Patient was admitted with a consideration of pterygomaxillary mass but later to be found out as severe spasm on the left masseter leading to diagnosis of tetanus infection. She continued to develop bilateral masseter spasms and dysphagia, accompanied by dyspnea that required tracheostomy. We report a case of cephalic tetanus with dysphagia, which was progressing to generalized tetanus but prompt intervention prevented disease progression.

INTRODUCTION: According to the World Health Organization, the incidence of total reported cases of tetanus infection for 2017 is 1,057. Globally, there is a considerable decrease in the incidence and mortality rate of tetanus due to an overall improvement in the administration of vaccinations, as well as hygiene practices and antitoxin administration. This was significantly lesser than the total reported cases of tetanus seen in the year 1980 which is 3,080. Tetanus is caused by an exotoxin, tetanospasmin, produced by *Clostridium tetani*. Diagnosis of tetanus is clinical and can present as someone with trismus, risus sardonicus, neck stiffness, dysphagia, muscle rigidity and spasm, or it can also present as a localized form in which the spasms and rigidity are confined to an anatomic area of the injury. Cephalic tetanus is a very rare type of tetanus which accounts for only 0.9-3% of the total tetanus cases seen. About two-thirds of cephalic tetanus cases progress to generalized tetanus with bad prognosis. It frequently progresses to generalized tetanus and is associated with a high mortality. Thus, we report one of the few cases of cephalic tetanus which presented with left neck stiffness and trismus.

THE CASE: Presenting the case of a 57-year-old female, gardener, who consulted at the out-patient services due to difficulty opening her mouth. Condition began with left-sided neck stiffness 4 days prior to consult that gradually progressed to development of dysphagia to solids and liquids with difficulty opening her mouth. Neck stiffness worsened 2 days prior causing her to assume rightward neck flexion to alleviate pain. Trismus also started to occur at this time that made eating more difficult. Her illness was not associated with any history of trauma or other symptoms such as pain over gums or throat area, fever, difficulty in speaking or lateralizing signs. Persistence of symptoms prompted consult. Patient is known to frequently pick her teeth with a reusable metal pick. She has not sustained bodily injuries for the past several months. Past medical history and family history were unremarkable. Pertinent physical exam showed she was only able to open her mouth to 2.5cm, temporomandibular joint (TMJ) non-displaced, spastic masseter tone, no cervical lymphadenopathies, the rest of the physical exam was unremarkable. Her other cranial nerves were intact, and the rest of the neurological exam was also unremarkable. She was admitted under ENT service as a case of Pterygomaxillary mass; rule-out Tetanus infection. Diagnostic imaging with contrast MRI of the neck and oropharynx, revealed diffuse disc bulges at C3-C7 levels with stenosis, cervical disc dessication with slightly reversed cervical lordosis from spasm. Plain revealed an enlarged left parotid gland which was suspicious for infection. Chest xray was also unremarkable. Blood tests of CBC (RBC 4.54 WBC 6.2, Hgb 137, Hct 0.41 Platelet 190, Segmenters 64, Lymphocytes 25, Monocytes 10, Eosinophils 1) iCa, Na, K, Bun, Creatinine, aPTT were all normal. Tetanus infection was highly considered during this time patient was started on an initial antibiotic of clindamycin. She was given treatment of IV Metronidazole instead since treatment wise; It is the most preferred choice aside from penicillin [15]. She was started and also treated with Tetanus hyperimmune globulin. She was closely monitored for signs of respiratory distress and placed on standby for intubation or emergency tracheostomy. Spasms

Infection Prevention and Control

December 06-07, 2018 | Valencia, Spain

of the masseter were treated with antispasmodic medications but worsening was eventually noted during the course, which was accompanied by dyspnea, oxygen desaturation, and tachycardia. Emergency tracheostomy had to be done to maintain a patent airway and she was placed on tracheal mask for oxygen support. She was thereafter transferred to the intensive care unit. The patient gradually improved and vital signs stabilized. Occurrence of mandibular spasm triggered by external stimuli such as lights or direct stimulation of the patient (such as suctioning) was lessened. There was no recurrence of oxygen desaturation thereafter. Treatment with metronidazole was completed for 14 days and physical therapy was continued. On the 21st hospital day, the patient was off O₂ support, without any recurrences of the spasm episodes and was discharged without complications. Patient came back 3 weeks thereafter for tracheostomy removal and tolerated the procedure well. No further complications were noted and patient resumed usual activities of daily living after the removal of tracheostomy without any difficulties.

DISCUSSION: Cephalic tetanus can progress to a generalized form and can lead to high mortality rate (15-30%), therefore a high index of suspicion should be made in patients who present with trismus. Tetanus in itself is a clinical diagnosis: acute onset of hypertonia, especially when the muscles of the jaw and neck are involved, tetanus should be at the top of the differential diagnosis, even in previously immunized patients without a clear portal of entry. Tetanus results from contamination of a wound by the bacterium *Clostridium Tetani* which form spores. It is an acute and often fatal disease usually accompanied by generalized rigidity and convulsive spasms of the muscles. The spores are commonly found in the soil and in animal faeces. The spores would enter the body via wounds in the skin, and, after germination under low-oxygen conditions, they would excrete a potent toxin, tetanospasmin, which would go further into the blood stream. Although tetanus has become a rare disease in developed countries, it remains a potential fatal condition without prompt and aggressive management in third world countries. Elderly people who live in rural settings are especially vulnerable, because of the declining of immunity to tetanus and the high risk of infected injuries. Tetanus is said to be classified into four types: neonatal, generalized, which represents the most frequent form (more than 80%), local and cephalic. Cephalic tetanus is a rare type of localized tetanus characterized by the involvement of the cranial nerves in the facial area. Either local or cephalic tetanus may progress to the generalized form. [6] Based on the initial manifestations of the patient, tetanus was already considered early on in the disease course of the patient due to presence of neck spasm and trismus. Index of suspicion increased further knowing that she has not received any form of prior immunization due to the fact that the patient was born in 1961. Expanded programs on immunization was later established in the Philippines in the year 1976 according to the Philippine's Department of Health. Diagnostic tests done revealed negative results for any mass lesions or malignancies and it was later found out that the mass was actually the severe spasm of the left masseter muscle. Despite of the primary consideration, the patient was still treated for tetanus in the first hospital day due to the high consideration of this diagnosis given her background and clinical presentation since tetanus is a clinical diagnosis and is not a laboratory diagnosis. The patient was aggressively managed with starting tetanus antitoxin, Human Tetanus Hyperimmune Globulin administration, and eventual tracheostomy placement since dyspnea developed during her course in the hospital. The aggressive management of this patient was done since cases of cephalic tetanus are known to progress to the generalized type, and mortality with the cephalic type is reported to be high. Antispasmodics were also helpful in this case to control the episodes of spasms together with putting emphasis on decreasing external stimuli that can trigger the patient's spasm episodes. We therefore conclude that tetanus should be a high suspicion in cases which would present with trismus especially for those without a known history of immunization and in those who don't present with an apparent source of injury or portal of entry for developing tetanus infection.

Biography

Roberto P. Salvino completed his Internal Medicine residency in Akron City Hospital, Akron, Ohio and subsequently went to Cleveland Clinic for 1 year for Infectious Diseases Fellowship. He held multiple positions in the past such as Board of Council of International Society for Infectious Diseases, Director of Medical Education and subsequently Chief of Clinics at the University of Perpetual Help DALTA Medical Center, President of Las Pinas Medical Society, Secretary of the Philippine College of Pharmaceutical Medicine. He also served as Country Medical Director of Johnson and Johnson Philippines. Currently, he is the Medical and Regulatory Affairs Director of iNova Pharmaceuticals.

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14th World Congress on

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Mohammad Hadi Dehghani

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Comparison of antiseptics' efficacy on bacterial infection prevention in hospital environment

In this study the efficacy of antiseptics on bacteria causing hospital infections has been studied. In this study the antimicrobial activity of Descocid, Korsolex basic, Mikrobac forte and persidin 1% was studied against bacteria causing hospital infections such as *Enterobacter aeruginosa* 1221 (NCTC 10006), *Staphylococcus epidermidis* (PTCC: 1435 (Cip81.55) and *Pseudomonas aeruginosa* Strain PAO1. Sensitivities of bacteria were determined by Minimum inhibitory Concentration (MIC) and Minimum bactericidal Concentration (MBC) antiseptics. In the second stage, the concentration of antiseptics was prepared according to the manufacturer's suggested protocol and the effect of antimicrobial agents were studied at the certain concentration and contact time. All disinfectants (Descocid, Korsolex basic, Mikrobac forte) concentration and contact time, Accordance with the manufacturer's brochure, had inhibitory effect on all bacteria. That this is consistent with the manufacturer's brochure. Persidin one percent in concentration of from 2 and 4 V/V % and exposure time 5 minutes could not inhibit the growth of bacterial. But at concentrations of 10 and 20% respectively 15 and 30 minutes exposure time, all three types of bacteria can be inhibited, which is consistent with the manufacturer's claims. In this study, the efficacy of antiseptics was determined with the Micro-dilution method recommended by the NCCLS. Korsolex basic, weakest antiseptics (the highest MIC) for the inhibition of three bacteria was determined. But Between all four antiseptics (according to manufacturer concentration), Only one percent Percidine 2 and 4 V/V % in consumer dilution and 5 minutes exposure time failed to inhibit the growth of *Pseudomonas aeruginosa*, *Staphylococcus epidermidis* and *Enterobacter aeruginosa*.

Recent Publications

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3. Kampf G, Kramer A. (2004). Epidemiologic background of hand hygiene and evaluation of the most important agents for scrubs and rubs. *Clin Microbiol Rev.* 17:863-93.
4. Majtan V, Majtanova L. (2002). Antibacterial efficacy of disinfectants against some gram negative bacteria. *Cent Eur J Public Health.* 10:104-106.
5. Louisiana State University Health Sciences Center. New Orleans Department of Microbiology, Immunology and Parasitology Last Modified. 2002:57-58.

Biography

Mohammad Hadi Dehghani (PhD) is a Full Professor at the Tehran University of Medical Sciences (TUMS), School of Public Health, Department of Environmental Health Engineering, Tehran, IRAN. His scientific research interests include the Environmental Health and Infectious Waste. He is the author of various research studies published at national and international journals, conference proceedings and Head of several research project at the TUMS. He has authored 8 books and more than 150 full papers published in peer-reviewed journals. He is an editorial board member and reviewer in many internal and international journals and is member of several international science committees around the world. He has supervisor and advisor PhD and MSc theses at the TUMS.

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