

**INDIAN COUNCIL OF MEDICAL RESEARCH  
DIVISION OF EPIDEMIOLOGY & COMMUNICABLE DISEASES**

**Minutes of the interactive meeting with the Chief Medical Officers (CMOs) of Gorakhpur Division to share the findings of research conducted by ICMR on causal association of *Orientia tsutsugamushi* with AES.**

**Venue, Date & Time:** NIV Field Unit, Gorakhpur on 14<sup>th</sup> July 2017 at 2:30 PM

**List of participants:**

Mr. Anil Kumar, Commissioner (Health), Gorakhpur,  
Dr. Pushkar Anand, Additional Director (Health), Gorakhpur,  
Dr. Rajeev Mishra, Principal BRD Medical College, Gorakhpur  
Dr. Mahima Mittal, HoD, Paediatrics, BRD Medical College, Gorakhpur  
Dr. Mahim Mittal, HoD, Medicine, BRD Medical College, Gorakhpur  
Dr. Kafeel Khan, Paediatrician, BRD Medical College, Gorakhpur  
Dr. Poornima Shukla, HoD, Deptt. of Homeopathy, BRD Medical College, Gorakhpur  
Chief Medical Officers from 4/7 districts of Gorakhpur (Gorakhpur, Maharajganj, Deoria and Kushinagar), which report high numbers of AES cases and

**ICMR & CMC, Vellore team:**

Dr. M.D. Gupte, ICMR Chair in Epidemiology  
Dr. Manoj Murhekar, Scientist G & Director-in-Charge, NIE, Chennai  
Dr. Winsley Rose, Professor, Paediatric Infectious Diseases, CMC, Vellore  
Dr. V.P. Bondre, Scientist -E & OIC, NIV Gorakhpur Field Unit  
Dr. Nivedita Gupta, Scientist E, ICMR Hqrs

\*CMOs from Basti, Siddharthanagar and Sant Kabirnagar could not attend

Dr. V. P. Bondre, Scientist E and Officer-in-Charge, NIV Field Unit, Gorakhpur opened the meeting and extended a warm welcome to all participants on behalf of DG, ICMR and Director, NIV. He gave a brief overview of the lab investigations carried out by NIV Field Unit, Gorakhpur in AES patients. He further described the changing trend in etiology of AES in Gorakhpur region predominantly from JE to a non-JE – scrub typhus etiology. He stated that the current meeting has been organised to closely interact with the CMOs, share the research findings of ICMR, explain them the importance of early treatment of this disease as well as understand their challenges and limitations in prevention and control of scrub typhus related AES.

Dr. M.D. Gupte, ICMR Chair in Epidemiology welcomed and thanked Mr. Anil Kumar, Commissioner (Health) of Gorakhpur and Dr. Pushkar Anand, Additional Director (Health), Gorakhpur for attending the meeting. He also thanked all other esteemed guests and

participants for sparing time for this important meeting. He talked about the rise of cases of JE in eastern UP since 1978 and decision of the Govt. of India to include JE vaccination in the National Immunization programme, subsequent to the 2005 JE epidemic in Gorakhpur. He underscored that the incidence of JE has declined after vaccination and has now staggered between 8-10%. However, the number of AES cases remain the same. He further described the research studies conducted by ICMR to establish a causal relationship between scrub typhus etiology and AES. He also acknowledged the critical role of CMC, Vellore in training and capacity building of clinical as well as paramedical staff of BRD Medical College, Gorakhpur. He informed that presentations will be made by ICMR, BRD and CMC teams to share the detailed research findings.

Dr. Nivedita Gupta, Scientist E, ICMR Hqrs. gave a brief description of the inter-ministerial project on AES/JE and studies conducted by ICMR on AES/JE as a part of this project since 2012. She stated that the initial focus of ICMR was on detection of JE and enteroviruses in AES patients. However, since 2014, subsequent to the findings of the preliminary investigations conducted by Prof. G. Arunkumar from Manipal Centre for Virus Research, the entire focus shifted to look for the association of *Orientia tsutsugamushi* infection with AES. After three years of intense efforts of ICMR Institutes as well as partners like BRD Medical College, Gorakhpur and CMC, Vellore, ICMR has been able to establish a causal association between scrub infection and AES.

Dr. Rajiv Mishra, Principal, BRD Medical College, Gorakhpur extended a warm welcome to Shri Anil Kumar, Commissioner (Health), Gorakhpur and Dr. Pushkar Anand, Additional Director (Health), Gorakhpur for sparing time for this important meeting. He also thanked ICMR team as well as their participants for showing keen interest to discuss the prevention and control of AES/JE in Gorakhpur. He said that demystifying AES is extremely challenging in view of multiple diverse and difficult to detect contributing etiologies. He said that we now have initial evidence of presence of scrub typhus in AES, however much more remains to be done to protect thousands of children who get affected by this disease.

Shri Anil Kumar, Commissioner (Health), Gorakhpur thanked the ICMR team as well as the participants for conducting this meeting to discuss the important issue of AES/JE in Gorakhpur. He highlighted the important initiatives of Govt. of UP in controlling AES/JE in terms of strong IEC interventions for protection from mosquito bites, early identification of signs and symptoms of AES/JE and seeking appropriate health care as well as importance of good hygiene and sanitation practices in controlling the disease. He also informed that the Govt. had taken pro-active steps to sensitize community and implement segregation of pigs from human dwellings, pig vaccination, construction of toilets in most of the houses and ensure their use as well. He said that Govt. has also taken the initiative to install new handpumps as well as check the quality of water in existing handpumps and putting a red mark on pumps with poor quality of water.

**Dr. Gupte described the objectives of the meeting as the following:**

- To share the findings of research conducted by ICMR on establishing a causal association between *Orientia tsutsugamushi* infection and AES.
- To discuss the current practices being followed by the CMOs to treat patients with AES and AFI as well as take stock of availability of Doxycycline and Azithromycin in all PHCs, CHCs and District Hospitals of all seven regions reporting high numbers of AES cases.
- To interact with the CMOs to understand the challenges faced by them in managing AES cases and suggest/find out possible solutions.
- To address all other queries of CMOs regarding prevention and control as well as treatment and management of AES/JE patients.

**Evidence on causal association of *Orientia tsutsugamushi* was shared with the attendees by making the following presentations:**

- Dr. Mahima Mittal presented the findings of AES Cell and positive drug response to i.v. Azithromycin in subgroup of AES patients with lab confirmed scrub typhus positivity.
- Dr. VP Bondre presented the detailed lab investigations conducted by him on 407 samples received from AES patients, through the AES Cell wherein a total of 244 samples (60%) were OT positive either by IgM ELISA or PCR.
- Dr. Manoj Murhekar presented the findings of AES, AFI surveillance as well as case control study conducted at Gorakhpur during 2015 & 2016.
- Dr. Winsley Rose presented an algorithm for identifying probable patients of scrub typhus based on clinical signs & symptoms and treating such patients early with Doxycycline and Azithromycin in recommended doses.

**During subsequent discussions with CMOs, following issues came out:**

- Currently, the main antibiotic used by clinicians to treat patients of suspected bacterial etiology are mainly second/third generation cephalosporins. Doxycycline or Azithromycin are not the drugs of choice for treating AES patients.
- In Gorakhpur, Maharajganj, Deoria and Kushinagar either Doxycycline capsules or Azithromycin tablets are present. Only at Gorakhpur, both Doxycycline capsule and Azithromycin tablet are present. Azithromycin syrup is not present anywhere.
- The doctors were aware of AES patients having tested positive for scrub typhus but were not sure of the causal association between the pathogen and disease. However, subsequent to the presentations made by ICMR, they seemed to be convinced about the causal association.

- CDC has newly established ELISA testing for scrub typhus at Deoria and Rudrapur. Besides, many other district hospitals have ELISA machines and would be willing to test for scrub typhus subject to training and provision of ELISA kits.
- Current IEC is focussed on JE and enterovirus prevention. Hence, appropriate IEC material will be required to spread awareness about prevention and control of scrub typhus associated AES.

**After discussion, following Recommendations were made:**

- The fever treatment algorithm developed by CMC, Vellore, based on the ICMR guidelines for treatment and management of *Rickettsial* infections, needs to be disseminated widely to all the PHCs, CHCs and District Hospitals. The doctors and health care workers should be sensitized to give Doxycycline and Azithromycin in fever cases of > 3 days duration with rash, eschar or hepatosplenomegaly and any undifferentiated fever > 5 days duration after ruling out malaria.
- DG, ICMR may consider writing a letter to UP State Health Deptt. to ensure availability of Doxycycline at PHCs/CHCs where it is currently unavailable (Deoria as well as other PHCs/CHCs, which were not represented in the meeting).
- ELISA testing for scrub should be initiated at Govt. facilities where ELISA machines are present. State Govt. should allocate funds for ELISA testing of scrub typhus. Training can be provided by NIV Field unit, Gorakhpur.
- The IEC material should be expanded to include prevention and control of Scrub typhus infection, in addition to JE and enteroviruses.
- The State Govt. should explore the possibility of training ASHAs and ANMs for identification of fever patients with probable diagnosis of scrub typhus. ASHAs and ANMs should also be trained to administer Doxycycline and Azithromycin in fever cases of >3days duration.
- Fever treatment practices at the ETCs should be evaluated and training should be imparted to ETC doctors to suspect scrub typhus and administer Doxycycline or Azithromycin at an early stage.

Meeting ended with a vote of thanks to the participants.