



Government of West Bengal
Institute of Postgraduate Medical Education & Research
Centre of Excellence in Medical Education & Research

Bangur Institute of Neurosciences
Neuromedicine (Neurology)

FACULTY

Dr. Goutam Gangopadhyay	MD, DM	Professor and Head
Dr. Tejendra Narayan Kundu	MD, DM	Professor
Dr. Atanu Biswas	MD, DM	Professor
Dr. Biman Kanti Roy	MD, DM	Professor
Dr. Alak Pandit	MD, DM	Professor
Dr. Samar Biswas	MD, DM	Associate Professor
Dr. Arijit Roy	MD, DM	Associate Professor
Dr. Adreesh Mukherjee	MD, DM	Assistant Professor
Dr. Uma Sinharoy	MD, DM	Assistant Professor
Dr. Souvik Dubey	MD, DM	Assistant Professor
Dr. Jayanta Ghosal	MD, DM	Assistant Professor
Dr. Sumanta Sarkar	MD, DM	Assistant Professor
Dr. Sumit Sarkar	MD, DM	Assistant Professor
Dr. Suman Das	MD, DM	RMO cum Clinical Tutor
Dr. Jasodhara Choudhuri	MD, DM	RMO cum Clinical Tutor
Dr. Shymapada Dan	MBBS, MD	RMO cum Clinical Tutor
Dr. Amritesh Maji	MBBS	RMO cum Clinical Tutor
Dr. Nilabjo Ghosh	MBBS	RMO cum Clinical Tutor

Neurogenetics Unit

Dr. Anindita Joardar	MSc, PhD	Assistant Professor
Mr. Sarnava Roy	MSc	Research Associate

Medical officers (in Ramrikdas Harlalka Hospital, IPGMER Annex 4)

Dr. Goutam Das (MD, DM) Superspeciality Senior Medical officer

Medical officers (in Neuro Emergency)

Dr. Bijan Kumar Samajpati	MBBS	Medical Officer
Dr. Mridula Chakarborty	MBBS, DGO	Medical Officer
Dr. Malay Das	MBBS	Medical Officer
Dr. Chandan Burman	MBBS	Medical Officer
Dr. Kuhu Diwanjee	MBBS	Medical Officer

Senior Residents

Dr. Sulagna Sahu	MD, DM	Senior Resident (3 rd Year)
Dr. Dibyayanam Sahu	MD, DM	Senior Resident (2 nd Year)
Dr. Abhishek Chowdhury	MD, DM	Senior Resident (2 nd Year)
Dr. Swati Kumar	MD, DM	Senior Resident (2 nd Year)
Dr. Apratim Chatterjee	MD, DM	Senior Resident (2 nd Year)
Dr. Subhadeep Gupta	MD, DM	Senior Resident (1 st Year)
Dr. Amlan Kusum Datta	MD, DM	Senior Resident (1 st Year)
Dr. S. Sandeep Kumar	MD, DM	Senior Resident (1 st Year)
Dr. Arpan Datta	MD, DM	Senior Resident (1 st Year)

Postdoctoral trainees (DM Neuromedicine)

3rd year DM residents	2nd year DM residents	1st year DM residents
Dr. Debleena Mukherjee Dr. Peyalee Sarkar Dr. Arkaprava Chakraborty Dr. Gurupada Das Dr. Sougata Bhattacharya Dr. Sambaditya Das Dr. Raju Agrawal	Dr. Rajdeep Saha Dr. Ajitava Dutta Dr. Manasi Das Dr. Uddalok Chakraborty Dr. Arindam Santra Dr. Soumita Sadhukhan Dr. Aishee Bhattacharya Dr. Soumen Bhat Dr. Sujoy Kabiraj Dr. Dwipayana Bhattacharya	Yet to join

Departmental Academic activities for the year 2021

- Seminar classes every week
Journal club twice a month
Case presentation every week
Electrophysiology class every week
- Demyelination update done with National faculty.
- Epilepsy update done with National Faculty.
- Neonatology & Pediatric EEG workshop in 2021 October
- Stroke update 2021
- Initiation of Day Care Facilities in Neurology department.
- Leading role in management of COVID 19 & Post Covid mucormycosis.
- Faculty involvement as speaker on Stroke, Demyelination, & Epilepsy related various topics.

DEPARTMENTAL ACHIEVEMENTS

Current Research Work

Epilepsy

- Study of clinical profile of refractory pediatric epilepsy based on recent ILAE classification with special reference to identifying etiological factors. (Dr. Raju)
- A study on drug rescheduling in chronic active epilepsy in a tertiary care centre from Eastern India – Dr. Saumen Bhat

Dementia

- Assessment of praxis in normal adults of Eastern India to obtain a normative data and validate in patients of dementia (Dr. Sandeep)
- A study of cognitive assessment of patients with amyotrophic lateral sclerosis- Dr Ajitava Datta

Stroke

- Study on role of vessel wall magnetic resonance imaging in intracranial vasculopathic diseases causing ischemic stroke in a tertiary care center. (Dr. Shambaditya)
- Predictors of hemorrhagic transformation in acute ischemic stroke – an observational study in a tertiary care centre of eastern India- Dr Uddalok Chakraborty
- Clinical presentation, demographic profile, outcome and treatment gap of large vessel stroke- a study from a tertiary care hospital in eastern India.- Dr. Rajdeep Saha

Demyelinating disorders

- Role of quantifying B cell lymphocytes in standardizing dosing schedule of Rituximab in Primary CNS Demyelination and comparing for safety in the two regimens in a tertiary care centre of Eastern India. (Dr. Peyalee)

- A study on clinical, laboratory and radiological factors predicting responsiveness to high dose steroids in first attacks and acute relapses of primary inflammatory demyelinating disorders of central nervous system in patients admitted in a tertiary care centre- Dr Soumita Sadhukhan
- Neuromuscular: A study on magnetic resonance imaging changes in different muscle diseases in a tertiary care centre from Eastern India. (Dr. Debaleena)

Neurogenetics

- Genotype phenotype correlation of myotonic dystrophy patients from Eastern India. (Dr. Gurupada)

Miscellaneous:

- Non motor neurological manifestations of Wilson's disease and its genetic correlation with mutations of the ATP7B gene. (Dr Arka Prava).
- Spectrum of visual dysfunction in parkinsons disease. (Dr. Sougata)
- A study on spectrum of clinical profile and outcome after treatment for neuro- tuberculosis in a tertiary care centre from eastern india- Dr Sujoy Kabiraj
- A study on cognitive profile of atypical parkinson's disease patients – Dr Mansi Das
- A study on clinical, radiological & etiological spectrum of longitudinally extensive transverse myelitis (LETM) in a tertiary care hospital , Eastern India- Dr Arindam Santra
- A study on spectrum of sexual dysfunction in patients of parkinson's disease- Dr Dwaipayan Bhattacharya

Conferences attended / organized by faculty

Professor Goutam Gangopadhyay

- Participated actively in the WCN2021 organized virtually.
- Participated as a faculty in periodic webinar organised by IAN
- Actively participated in monthly social awareness programmes organised by IAE

Professor Atanu Biswas

- Participated in the IAN Masterclass series in cognitive assessment organised by the Indian Academy of Neurology online in the month of February 2021 and delivered a lecture on "Spatial cognition, perceptual problems and praxis in dementia" on 28th February 2021. Two representative cases were presented by Dr. Amlan Kusum Datta and Dr. Sandeep Kumar.
- Participated as co-chairperson in a session of "Journal Quest" organised virtually by the Movement Disorders Society of India (MDSI) on November 20, 2021. Multiple articles from journals were presented by Dr. Adreesh Mukherjee in the Journal Blast session and a Video case presented by Dr. Amlan Kusum Datta.
- Participated in the IAN Masterclass series in cognitive assessment organised by the Indian Academy of Neurology online in the month of February 2021 and delivered a lecture on "Spatial cognition, perceptual problems and praxis in dementia" on 28th February 2021.
- Delivered a lecture in the virtual Master Class series organised by API WB Chapter entitled "Approach to dementia" on 27th June 2021
- Moderated a panel discussion on Dementia: a public awareness and education program organised by Indian Academy of Neurology online on 21st September 2021 (on World Alzheimer's Day)
- Participated an online CME organised by ARDSI, Calcutta chapter and delivered a talk entitled "Know Dementia, Know Alzheimer's" on 19th September 2021 and delivered a lecture entitled "Disease burden of dementia and diagnostic challenges in the community"
- Participated as faculty in an online CME "Outsmarting Dementia" organised on the eve of World Alzheimer's day and delivered a lecture entitled "Diagnosis of AD: Current Challenges and Future Scenarios"
- Participated in the "Neurosphere- CONy India 2021" conducted under the aegis of World Congress of Controversies in Neurology held online on 9-10 October 2021 and spoken For the debate "Is GWAS likely to help solve AD?"
- Participated in the Annual conference of Indian Academy of Neurology (IANCON 2020-21) held in Bangalore in hybrid mode in November 2021 and delivered a lecture entitled "Alzheimer's disease: advances in pathophysiology and treatment" in a symposium.
- Participated in the Satellite Symposium, entitled Translational Neurophysiology & Cognition, Jointly organised by the Indian Academy of Neurosciences (IAN) and Department of Physiology, University of Calcutta & CPEPA-Centre for "Electrophysiology and Neuroimaging including Mathematical Modelling", University of Calcutta on 10th November, 2021 in online platform and delivered a lecture entitled "COVID-19 and cognition"
- Participated in the ARDSICON 2021 virtual conference held on 20-21 November 2021 and delivered a lecture entitled "Recent advances in medical management of Alzheimer's Dementia"
- Participated and chaired a session of "Journal Quest" organised virtually by the Movement Disorders Society of India (MDSI) on November 20, 2021

- Organised two-day hybrid seminar "NEUROUPDATE KOLKATA" on 27-28 November 2021 and chaired two sessions.

Dr. Jasodhara Choudhury

- Organised as a part of scientific committee national conference of pediatric neurology- Neuro pedicon 2021
- Coordinator and organise of pediatric and Neonatal EEG workshop at BIN, October 2021
- Faculty at National conference Neuropedicon 2021.
- Faculty at West Bengal Academy of paediatrics state conference WB PEDICON 2021.
- Faculty at AOCN organised Webinar (September 2021) for pediatric neurologist.
- Moderator at Neonatal and Pediatric EEG workshop August 2021 organised by Cochbehar Academy of Pediatrics.
- Participated in stroke summer school 2021 as delegate.
- Participated in IANCON 2021 as delegate.

SERVICE INFORMATION

Attendance at OPD

Month	Nov 2020	Dec 2020	Jan 2021	Feb 2021	Mar 2021	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sep 2021	Oct 2021	Total
New	7207	8985	9416	10561	13045	8887	2640	4839	9904	12443	12532	10925	111384
Old	530	557	901	1155	2158	2399	955	949	1961	1858	1931	1570	16924

BIN Neuromedicine OPD

Month/Year	New male patient	New female patient	New total	Old male patient	Old female patient	Old total	OPD total
Nov-20	3845	3362	7207	302	228	530	7737
Dec-20	4699	4286	8985	317	240	557	9542
Jan-21	4992	4424	9416	513	388	901	10317
Feb-21	5564	4997	10561	613	542	1155	11716
Mar-21	6860	6185	13045	1183	975	2158	15203
Apr-21	4720	4167	8887	1298	1101	2399	11286
May-21	1538	1102	2640	556	399	955	3595
Jun-21	2820	2019	4839	541	408	949	5788
Jul-21	5348	4556	9904	1074	887	1961	11865
Aug-21	6378	6065	12443	999	859	1858	14301
Sep-21	6489	6043	12532	1023	908	1931	14463
Oct-21	5735	5190	10925	840	730	1570	12495

Ramrikdas Haralalka Hospital Admission Statistics

MONTH	ADMISSION	DISCHARGE	DEATH	DORB	TR. IN	TR. OUT	CENCUS AT MIDNIGHT	SWASTHYA SATHI
Nov-20	108	81	33	0	4	4	1743	0
Dec-20	109	71	34	0	3	3	1783	0
Jan-21	120	79	41	2	4	4	1778	61
Feb-21	129	71	50	3	2	4	1593	32
Mar-21	147	87	52	2	6	10	1734	28
Apr-21	139	98	37	4	2	2	1692	11
May-21	143	87	23	11	2	5	1722	5
Jun-21	105	72	36	0	6	7	1705	5
Jul-21	107	65	36	3	0	1	1805	2
Aug-21	142	98	34	4	6	5	1946	0
Sep-21	144	92	46	5	2	7	1980	2
Total	1393	901	422	34	37	52	19481	146

In patient

Total Admission-1670 (Male- 904 & Female- 766)

- Stroke- 751
- Metabolic encephalopathy-72
- Degenerative dementia- 38
- Movement disorder- 88

- | | |
|------------------------------|-------------------------------------|
| 5. Infections- 152 | 11. AHC disorder- 24 |
| 6. Demyelination- 92 | 12. Epilepsy-63 |
| 7. Spinal cord disease- 58 | 13. Optic neuritis- 62 |
| 8. Neuromuscular junction-16 | 14. Multiple cranial nerve palsy-14 |
| 9. Peripheral neuropathy-159 | 15. Miscellaneous- 62 |
| 10. Muscle disease- 19 | |

Special clinic performance in the period November 2020 – October 2021

Clinic	Consultant in charge	New	Old
Cognitive	Prof. Atanu Biswas	45	69
Movement disorder	Prof. Atanu Biswas	56	237
Botulinum toxin	Dr. Samar Biswas	71	416
Epilepsy	Prof. Alak Pandit	58	397
Stroke	Prof. Biman Kanti Ray	54	197
Neurogenetics	Dr. Adreesh Mukherjee	39	53
Neuromuscular	Prof. Alak Pandit	24	94
Demyelination	Prof. Gautam Gangopadhyay	66	121
Headache	Prof. Alak Pandit	11	8
Pediatric	Dr. Jasodhara Choudhuri	3	0
TOTAL		427	1592

Electrophysiology laboratory performance for the period November 2020- October 2021

	EEG	NCV/EMG	VEP/BERA	VIDEO EEG	TOTAL
Nov-20	177	185	69	12	443
Dec-20	275	482	185	17	959
Jan-21	687	751	392	35	1865
Feb-21	595	959	457	40	2051
Mar-21	617	1175	522	52	2366
Apr-21	607	1020	396	49	2072
May-21	216	260	196	10	682
Jun-21	225	383	172	12	792
Jul-21	367	532	317	17	1233
Aug-21	392	688	390	12	1482
Sep-21	487	795	312	15	1609
Oct-21	340	384	286	07	1017

Performances of Physiotherapy department during the period November 2020-October 2021

OPD All patients referred by NeuroMedicine & Neurosurgery on daily outdoor basis

- Follow up of the patients on referred outdoor & previous discharged cases of stroke rehab, movement disorder conditions, neuromuscular rehabilitation, Physiotherapy in pediatric neurology, rehabilitative pain management, post –operative Neurological surgeries etc

(Follow up dates given to patients as per the case like 4 weeks or 6 weeks or 8 weeks)

Indoor Patients

- Physiotherapy/Neuro-Rehabilitation Assessment & Treatment for all Neuromedicine patients admitted in BIN.
- Post-Operative Physiotherapy Assessment & Treatment plan of care for Neurosurgery patients.
- Discharge treatment plan of care is advised & demonstrated.

(Follow up dates given to patients after Discharge as per the case like 4 weeks or 6 weeks or 8 weeks)

ICU & HDU

- All the patients admitted in ICU & HDU are assessed & treated daily as auto referred for Physiotherapy treatment. (Chest Physio & Neuro rehabilitation)

Special Clinic

- Weekly Special clinic conducted by Neurology professors at BIN is attended for rehabilitation of patients.
- Follow up for the patients is done as per the cases as required.
 - Total No. of patients from 1st Nov. 2020 to 31st Oct. 2021

Total no. of Outdoor patients of Neuromedicine, Neurosurgery & follow up of outdoor & discharged patients	Total no. of Indoor patients in Neuromedicine, post-op Neurosurgery, ICU & HDU & discharge treatment plan	Total no of Special Clinic cases & follow up	TOTAL
5818	5493 + 2492 =7635	217	14168

Total No of Physiotherapist posted 04 (four)

Report of Neurogenetics Unit

(November 2020 to October 2021)

- Number of patients (including new patients as well as patients who came for review) in the genetic clinic – 151
- Number of patients for whom the following diagnostic tests were done in the Genetic Laboratory in the above said time – 66

The following tests were conducted routinely in the Neurogenetic laboratory

Muscle Diseases	Movement Disorders
Duchene's Muscular Dystrophy Becker's Muscular Dystrophy Myotonic Dystrophy-I Spinal Muscular Atrophy	Huntington's Disease Autosomal Dominant Ataxia; SCA1, SCA2, SCA3, SCA6, SCA8, SCA12, DRPLA Autosomal Recessive Ataxia; Friedreich's Ataxia

Genetic Counselling of 151 patients were done. It is conducted for the adult patients, their family members and to guardians in case of minors regarding their marriage, conceiving another issue, psychological assistance, affection of their children etc.; depending upon the pattern of inheritance – Autosomal Dominant, Autosomal Recessive, X-linked or mitochondrial inheritance.

Sarnava Roy, Research Associate/officer in the Neurogenetic Unit, has been actively involved in COVID-19 RT-PCR testing and successfully lead a subgroup for the same from end of April to end of May, 2020.

Projects

1. ICMR funded project entitled "Establishment Of The Indian Stroke Clinical Trial Network (INSTRUCT)" INSTRUcT" started since April 2017
2. ICMR funded project entitled "Fever, hyperglycemia, swallowing and hypertension management in acute stroke: A cluster randomized controlled trial (Indian Quality Improvement in Stroke Care study" started since September 2018
3. ICMR funded project entitled " HTA of National Stroke Care Registry Programme Development of Hospital Based Stroke Registries in Different Regions of India" started since September 2021.
4. ICMR funded project entitled " Indian Multiple Sclerosis and allied Demyelinating disorder registry and research network started since October 2021.
5. ICMR funded project entitled " IMPETUS : Implementation of an Evaluation and Treatment Package for Uniform Stroke Care and outcomes in the Medical colleges. An Implementation Research study" started since December 2021

PUBLICATIONS FROM THE DEPARTMENT

1. Sayantan Chakraborty, Anindita Joardar, Sarnava Roy, Goutam Gangopadhyay, Atanu Biswas. ApoE ϵ 4 and IL-6-174G/C polymorphism may lead to early onset of Alzheimer's Disease with atypical presentation. *Neurology India* October 2021; 69: 1228-33. doi: 10.4103/0028-3886.329604.
2. Dutta A, Gupta S, Ray BK. Bilateral Trigeminal Myokymia in chronic inflammatory Demyelinating Polyneuropathy With systematic Lupus Erythematosus – Sjogren overlap Syndrome. *JAMA Neurol.* 2021 Nov 15 doi: 10.1001/jamaneurol.2021.4069. Epub ahead of print. PMID: 34779864
3. Jasodhara Chaudhuri, Samar Biswas, Goutam Gangopadhyay, Tamoghna Biswas, Jyotishka Datta, Atanu Biswas, Alak Pandit, Amlan Kusum Datta, Adreesh Mukherjee, Atanu Kumar Dutta, Paramita Bhattacharya, Avijit Hazra. Correlation of ATP7B gene mutations with clinical phenotype and radiological features in Indian Wilson disease patients. *Acta Neuroplogica Belgica.* October 2021. doi: 10.1007/s13760-021-01816-w
4. GBD 2019 Dementia Collaborators. Use of multidimensional item response theory methods for dementia prevalence prediction: an example using the Health and Retirement Survey and the Aging, Demographics, and Memory Study. *BMC Med Inform Decis Mak* (2021) 21:241 <https://doi.org/10.1186/s12911-021-01590-y>
5. Gautam Das, Samar Biswas, Souvik Dubey, Durjoy Lahiri, Biman Kanti Ray, Alak Pandit, Shankar Prasad Saha, Atanu Biswas. Perception about Etiology of Epilepsy and Help-Seeking Behavior in Patients with Epilepsy. *International Journal of Epilepsy* 2021; 7(01): 22-28. doi: 10.1055/s-0041-1731933
6. GBD 2019 Collaborators. Global mortality from dementia: application of a new method and results from the Global Burden of Disease Study 2019. *Alzheimer s & Dementia Translational Research & Clinical Interventions* July 2021; 7(1). doi: 10.1002/trc2.12200
7. GBD 2019 Dementia Collaborators. The Burden of Dementia due to Down Syndrome, Parkinson's Disease, Stroke, and Traumatic Brain Injury: A Systematic Analysis for the Global Burden of Disease Study 2019. *Neuroepidemiology* 2021;55:286–296. doi: 10.1159/000515393
8. Ashwini Bhatt, Atanu Biswas, Gautam Das, Durjoy Lahiri, Souvik Dubey, Adreesh Mukherjee. Behavioral variations among vascular cognitive impairment subtypes – A comparative study. *Applied Neuropsychology: Adult*, doi: 10.1080/23279095.2021.1954002
9. India State-Level Disease Burden Initiative Neurological Disorders Collaborators. The burden of neurological disorders across the states of India: the Global Burden of Disease. *Lancet Global Health.* July 13, 2021. doi:[https://doi.org/10.1016/S2214-109X\(21\)00164-9](https://doi.org/10.1016/S2214-109X(21)00164-9)
10. Subhadeep Gupta, Atanu Biswas, Arpan Dutta, Deep Das, Biman Kanti Ray. Simultaneous cerebral venous and arterial involvement in the postpartum period: Rare presentation of antiphospholipid syndrome. *Neurology Asia* 2021, 26(2):431-436
11. Sutapa Som Chaudhuri, Koel Sinha, Rabindranath Majumder, Atanu Biswas, Chitragada Das Mukhopadhyay. COVID-19 and central nervous system interplay: A big picture beyond clinical manifestation. *Journal of Biosciences* 2021; 46(2). doi: <http://dx.doi.org/10.1007/s12038-021-00165-3>
12. Abhishek Chowdhury, Adreesh Mukherjee, Uma Sinharoy, Alak Pandit, Atanu Biswas. Non- motor features of amyotrophic lateral sclerosis: a clinic-based study. *Annals of Indian Academy of Neurology* 2021; 24(5): 745-53. doi: 10.4103/aian.AIAN_51_21
13. Amlan Kusum Datta, Adreesh Mukherjee, Biman Kanti Ray, Atanu Biswas. Anti-MOG antibody long segment myelitis presenting as anterior cord syndrome. *BMJ Case Reports* 2021; 14:e240055. doi: 10.1136/bcr-2020-240055
14. Debaleena Mukherjee, Sougata Bhattacharya, Srimant Pattnaik, Subhadeep Gupta, Biman Kanti Ray, Atanu Biswas. Ataxia and myoclonus with a cherry-red spot unfurling an unusual phenotypic presentation of Sialidosis type 1. *J Mov Disord* 2021; 14(3): 256-258. doi: 14802/jmd.20119.
15. Mrinal Acharya, Subhadeep Banerjee, Apratim Chatterjee, Adreesh Mukherjee, Samar Biswas, Goutam Gangopadhyay, Atanu Biswas. Predicting long-term outcome of patients of early parkinsonism with acute levodopa challenge test. *Neurology India* 2021; 69(2):430-4. doi: 10.4103/0028-3886.314539
16. Prashanth L. Kukkle, Vinay Goyal, Thenral S. Geetha, Kandadai R. Mridula, Hrishikesh Kumar, Atanu Biswas, Pramod K. Pal, Uday Muthane, Shyamal K. Das, Niall Quinn, Vedam L. Ramprasad and Parkinson Research Alliance of India (PRAI). Clinical study of 668 Indian subjects with juvenile, young, and early onset Parkinson's disease. *Canadian Journal of Neurological Sciences*, First View, pp. 1 – 9 DOI: <https://doi.org/10.1017/cjn.2021.40>
17. Arindam Biswas, Dipanwita Sadhukhan, Atanu Biswas, Shyamal K. Das, Tapas K. Banerjee, Partha Sarathi Bal, Sandip Pal, Amitabha Ghosh, Kunal Ray, Jharna Ray. Identification of GBA mutations among neurodegenerative disease patients from eastern India. *Neuroscience Letters.* 2021; 751, 23 April 2021, 135816. <https://doi.org/10.1016/j.neulet.2021.135816>
18. Amlan Kusum Datta, Alak Pandit, Samar Biswas, Atanu Biswas, Biman Kanti Roy, Goutam Gangopadhyay. Spectrum of anti-NMDA receptor antibody encephalitis: clinical profile, management and outcomes. *Annals of Indian Academy of Neurology* 2021; 24(3): 383-389. doi: 10.4103/aian.AIAN_817_20.
19. Local Burden of Disease Vaccine Coverage Collaborators. Mapping routine measles vaccination in low- and middle-income countries. *Nature* 589, 415–419 (2021). <https://doi.org/10.1038/s41586-020-03043-4>
20. Sourav Banerjee, Adreesh Mukherjee, Kochupurackal P. Mohanakumar, Atanu Biswas. Effect of COVID-19 related lockdown on nonmotor symptoms of Parkinson's disease. *Annals of Indian Academy of Neurology.* doi: 10.4103/aian.AIAN_65_21 (ahead of print)
21. Ghosh R, Ray A, Roy D, Das S, Dubey S, Benito-León J. Parkinsonism with Akinetic Mutism following Osmotic Demyelination Syndrome in a SARS-CoV-2 infected Elderly Diabetic Woman: A Case Report. *Neurologia.* 2021. (Accepted)
22. Ghosh R, Dubey S, Chatterjee S, Ray BK. Moyamoya disease masquerading as febrile seizures. *Med J DY Patil Vidyapeeth.* 2021; (Accepted)

23. Ghosh R, Biswas P, Chatterjee S, Sengupta S, Dubey MJ, Ray BK, *Dubey S*. Love and emotions at the time of COVID-19. *Minerva Psichiatr.* 2021(3); (Accepted)
24. *Dubey S*, Mukherjee D, Sarkar P, Mukhopadhyay P, Barman D, Bandopadhyay M, Pandit A, Sengupta A, Das S, Ghosh S, Adhikari S, Biswas PS, Pal P, Roy H, Patra N, Das A, Sinha P, Mondal MK, Shrivastava SR, Bhattacharya K, Mukhopadhyay M, Ahmed K, Halder TK, Saha M, Ahmed K, Maity S, Mandal A, Chatterjee D, Saha S, Chunakar A, Saha A, Ray BK. COVID-19 associated rhino-orbital-cerebral mucormycosis: An observational study from Eastern India, with special emphasis on neurological spectrum. *Diabetes Metab Syndr.* 2021;15(5):102267.
25. *Dubey S*, Lahiri D, Ray BK. A Rare Cause of Generalized Dystonia in Adolescence: Labrune Syndrome. *Neurol India.* 2021;69(4):1116-8.
26. Bhat A, Biswas A, Das G, Lahiri D, *Dubey S*, Mukherjee A. Behavioral variations among vascular cognitive impairment subtypes - A comparative study. *Appl Neuropsychol Adult.* 2021 Jul 22:1-8. doi: 10.1080/23279095.2021.1954002.
27. Ghosh R, *Dubey S*, Mandal A, Ray BK, Benito-León J. Complex movement disorders in SARS-CoV-2 infection induced acute disseminated encephalomyelitis. *J Neuroimmunol.* 2021 Sep 15;358:577655.
28. Gupta S, *Dubey S*, Ray BK. Cognitive assessment in dementia.
29. Chakraborty AP, Ray A, Mukherjee D, Gupta S, Pandit A, *Dubey S*. Subacute measles encephalitis in a case of late presenting congenital HIV with epilepsy partialis continua as the first manifestation: A case report. *J Fam Med Prim Care.* 2021; 10(9):3502-4.
30. Kumar S, Gangopadhyay G, Biswas A, *Dubey S*, Pandit A, Das S, Ray BK. A Comparison of Cognitive performances between Neuromyelitis Optica Spectrum Disorder and Multiple Sclerosis patients in Indian context. *Egypt J Neurol Psychiatr Neurosurg.* 2021;97:57.
31. Das G, Biswas S, *Dubey S*, Lahiri D, Ray BK, Pandit A, Saha SS, Biswas A. Perception about Etiology of Epilepsy and Help-Seeking Behavior in Patients with Epilepsy. *Int J Epilepsy.* 2021; DOI: 10.1055/s-0041-1731933.
32. Das S, *Dubey S*, Ray BK. Endovascular treatments of aneurysm co-existing with Moyamoya Angiopathy. In: *NeuroInterventional Surgery-Current Status and Future.* 2021.
33. Metya S, Shaw S, Mondal S, Chakraborty B, Das S, Roy S, Das MK, Kanjilal S, Ray BK, *Dubey S*. MRI-negative Myeloradiculoneuropathy following Covid-19 infection : An index case. *Diabetes Metab Syndr.* 2021;15(6):102305.
34. Ghosh R, *Dubey S*, Ray A, Roy D, De K, Mandal A, Naga D, Swaika BC, Pandit A, Benito-León J. Wernicke's encephalopathy precipitated by neuromyelitis optica spectrum disorder and Graves' disease: A tale of clinical and radiological dilemmas. *Clin Exp Neuroimmunol.* 2021; DOI:10.1111/cen3.12661
35. Das S, Ghosh R, *Dubey S*, Pandit A, Ray BK, Kraemer M. Limb-shaking TIA in Moyamoya angiopathy. *Clin Neurol Neurosurg.* 2021;207:106783.
36. Ray A, Kar A, Ray BK, *Dubey S*. Hypercalcaemic encephalopathy as a presenting manifestation of sarcoidosis. *BMJ Case Rep.* 2021;14(9):e241246.
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CONTRIBUTION TO THE COVID-19 BATTLE

This academic year has proven quite challenging for our Institute .But tough times are just to prove how resilient our doctors are and I am proud to declare that we collectively have been successful in providing healthcare to the needful irrespective of the hindrance that COVID brought to us. Regular screening of patients and following up till they were transferred to designated COVID hospitals if results were positive were carried out. Be it any situation care and provision of medicine which we stand by as doctors was never compromised.

In this view there are many who had been selected by the Department of Health and Family welfare, West Bengal to act as specialist consultant in various COVID designated hospitals . They have visited these hospitals regularly and fought with the invisible enemy of this pandemic hand in hand with the staff of the respective hospitals. Their contribution and dedication is admirable and we applaud them for their sincerity.

Name	Designation	COVID Hospital
Dr. Biman Kanti Ray	Professor	Medical College Hospital
Dr. Alak Pandit	Professor	MR Bangur
Dr. Sumanta Sarkar	Assistant Professor	Medical College Hospital
Dr. Souvik Dubey	Assistant Professor	Medical College Hospital
Dr. Jayanta Ghoshal	Assistant Professor	MR Bangur
Dr. Adreesh Mukherjee	Assistant Professor	CNCI
Dr. Uma Sinharoy	Assistant Professor	CNCI
Dr. Sumit Kumar Sarkar	Assistant Professor	Sanjiban Hospital, Howrah
Dr. Durjoy Lahiri	Senior Resident	MR Bangur
Dr. Arghya Deb	Senior Resident	Sanjiban Hospital, Howrah