



Systematic Reviews

# Brief history of hematology care and research in West Bengal, India

Prakas Kumar Mandal

Associate Professor, Department of Hematology, N.R.S. Medical College & Hospital, 138, A.J.C. Bose Road, Kolkata-700014, West Bengal, India

\*Corresponding author:

Prakas Kumar Mandal  
Associate Professor,  
Department of Hematology,  
N.R.S. Medical College &  
Hospital, 138, A.J.C. Bose Road,  
Kolkata-700014, West Bengal,  
India

[pkm.hem@gmail.com](mailto:pkm.hem@gmail.com)

Received : 16-May-2021

Accepted : 20-May-2021

Published : 31-May-2021

DOI

10.25259/JHAS\_10\_2021

Quick Response Code:



## ABSTRACT

The hematology care, research, and development in West Bengal had a glorious past. Dr. J.B. Chatterjea represented the pioneers in hematology practice and research from Calcutta, West Bengal. Calcutta School of Tropical Medicine (CSTM) is considered as the birthplace of Hematology not only in India but also in whole of Asia. Dr. J.B. Chatterjea single handedly took the Hematology Department to a new height and made it a center for learning and advanced research in hematology. Subsequently, many of his able disciples spread out elsewhere in the country expanding the mission of research in hematology. The tragic untimely death of Dr. Chatterjea in 1972 was an irreparable loss to the development of hematology in this country. The glory and glamor of hematology care and research in West Bengal faded way over time. In the recent years, with the establishment of new hematology care and research units at other Government Medical Colleges, private sectors and enormous contributions from the basic scientists have helped to rescue the lost glory and shaping the present day comprehensive hematology care and research in West Bengal, India. In this brief review, the present author tries to give an overview of the past and present of hematology care and research in West Bengal and the author in the present review does not claim to have described every bit of hematology development in this part of the country.

**Keywords:** West Bengal, Hematology, Development, Brief history

## INTRODUCTION

The hematology care and research in West Bengal started with Prof. J.B. Chatterjea who single-handedly nurtured the subject in a manner that Calcutta was leading India at that time in the field of hematology and West Bengal was in the forefront of hematology service and research till early 1970s.<sup>[1]</sup> The doyen of hematology research in India Prof. Chatterjea passed away in 1972. In the subsequent three decades, West Bengal was looking for robust hematology setup in Government Medical Colleges unsuccessfully.

## THE DAWN AND THE GLORIOUS PAST

Calcutta School of Tropical Medicine (CSTM) is considered as the birthplace of hematology not only in India but also in whole of Asia. Founded by Sir Leonard Rogers way back in 1914, the corridors of CSTM had regular footfalls of eminent researchers like Leonard Rogers, Ronald Ross, R Knowels, UN Brahmachari, JB Chatterjee, RN Chopra, and many others. Although CSTM is a more than century old institution, hematology as a discipline most likely took shape sometime in the 1940s when Prof. Lionel Napier and Prof. C.R. Dasgupta were working in the institution. Dr. J.B. Chatterjee joined in 1945 as ICMR (Indian Council Of Medical Research) fellow and in

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

©2021 Published by Scientific Scholar on behalf of Journal of Hematology and Allied Sciences

1949 he joined there as faculty.<sup>[2,3]</sup> Dr. J.B. Chatterjea single handedly took the Hematology Department to a new height and made it a center for learning and advanced research in hematology. He was assisted by another very good research worker Dr. Susheela Swarup-Mitra who started working on red cell enzymes and membrane defects; later on she extended her work on lymphocyte surface markers. Dr. R.N. Roy was attracted to hematology and under the able guidance of Prof. Chatterjea carried out the research work at CSTM; later on he moved to his alma mater, Medical College, Kolkata as the head the Department of Medicine. Prof. R.N. Roy worked as a Rockefeller Fellow in one of the earliest bone marrow transplant program involving cadaver marrow. He also developed a technique of plasma hemoglobin measurement that is used till date. Then Dr. Sandhya Ghose, Dr. A.K. Basu, Dr. M.M. Rakshit and Dr. Manju Dutta Chaudhuri struggled to carry on the hematology research in the government sector. Till mid-60s, hematology in West Bengal was limited to CSTM because all these persons who became famous by their own right were working at the CSTM.

#### THE PIONEER: Dr. Jyoti Bhusan Chatterjea<sup>[3-7]</sup>

Dr. Chatterjea, M.D., F.N.A., F.R.C.Path. (Lond.), F.A.C.P.(Cor.), F.A.M.S, was born in Jessore, a district town in undivided Bengal on 16<sup>th</sup> February, 1919. He graduated from Medical College, Calcutta in 1942 and joined the CSTM in 1945 as Assistant Research Officer in the hematology Unit of ICMR. He obtained his doctorate degree in 1949, became Professor of Hematology in 1956; appointed as the Director of CSTM in 1966. He had the rare quality of a clinical investigator whose technical skills at the bench was matched by his excellence at the bed side and had chosen hematology for a career at a time when it was still to develop as a specialty in this part of the globe. His contributed a lot in different fields of hematology especially studies on nutritional and iron deficiency anemia, leukemia, red cell enzymes and abnormal hemoglobin disorders. First cases of HbE, HbH and Hb Lepore were reported in India by Prof. J.B. Chatterjea in the years 1956, 1961 and 1971, respectively. He was honored by many prestigious awards, notably the Barclay Medal of the Asiatic Society (1963) and Basanti Devi Amir Chand Prize in 1964 by the Indian Council of Medical Research. The Council of Scientific and Industrial Research awarded him Shanti Swarup Bhatnagar Prize, one of the highest Indian science awards in 1966. He was a member of the Governing Body of the International Standardization Committee in Hematology since 1964 and served as a member of the Expert Advisory Panel on Human Genetics of the World Health Organization (1967–1972).

A Fellow of Indian Academy of Medical Sciences, Royal College of Pathologists, U.K. and a corresponding fellow of the American College of Physician, Dr. Chatterjea was the President of Indian Society of Haematology and Blood

Transfusion (ISHBT), Indian Association of Pathologists, Anthropological Society of India and Medical and Veterinary Section of the Indian Science Congress. On the International Scene, he was Counsellor of the International Society of Haematology (1954–1968), Vice President (1968–1972) and the Asian Representative at the Executive Committee of the International Society of Blood Transfusion (1964).

After three decades of pioneering research in hematology, he undoubtedly established himself as the “father of hematology research” in India. He had excellent knowledge of the subject, unparalleled ideas for research, leadership qualities to convert his ideas into action.

He passed away after a brief illness on 29th February, 1972. The tragic untimely death of Dr. Chatterjea at the age of 53 was an irreparable loss to the development of Hematology in this country.

#### THE LEGACY CONTINUED<sup>[7,8]</sup>

The legacy of Prof. J.B. Chatterjea was being carried out by some of his contemporaries and many of his able disciples also. Dr. Asim Kumar Basu after completing PhD (Hematology) at the University of London in 1963, joined the Department of Hematology of CSTM as Lecturer in 1964 and retired in 1985. He was the member of Advisory Committee (Hematology) of ICMR and Officer-in-charge of the ICMR project on leukemia at CSTM. He is credited with 50 publications in national and international journals. He was honored with the first “Lifetime achievement award” by the Bengal Society of Hematology in 2016. Brig. (Dr.) R.N. Dutta was the leading Hematologist of the Armed Forces in the 1970s and 80s. At Armed Forces Transfusion Centre, Delhi Cantt., he started to prepare FFP and cryo-precipitate that time. He had a wide range of interest from treatment of bleeding disorders, thalassemias, hemoglobinopathies, nutritional anemias to snake bites. Following his retirement as a Brigadier from the Indian Army, he settled down in his home town in Kolkata. He then joined Assembly of God Church Hospital, Kolkata and started a hematology unit in an organized way and served the society till his last days. Dr. Kshitish Chandra Das, after passing MBBS from R.G. Kar Medical College, completed his PhD under the guidance of Dr. B.K. Aikat and Dr. N.N. Sen at IPGMER, Kolkata. He was one of the pioneers in developing simple technique for karyotyping for study of various constitutional and hematological disorders. While working in Kolkata he developed a new assay for coagulation factor VIII for the diagnosis of hemophilia. Then he moved to newly developed PGIMER, Chandigarh as the faculty member in hematology. Dr. N.N. Sen joined west Bengal health services and served as teaching faculty up to the rank of Professor in the division of Hematology under the Department of Pathology and Bacteriology, IPGMER, Kolkata from 1957 to 1981. Then he served as Director of CSTM and Professor of Hematology

from 1983 to 1986. Dr. Sen was the first to report and study a case of factor XIII deficiency in the Asia Pacific region. He had published more than 40 papers in many national and international peer-reviewed journals. *Dr. Sandhya Ghosh* gained her PhD on “Acute Myeloid Leukaemia” in 1964 under the able guidance of Prof. J. B. Chatterjea. On her return from UK as a clinical observer in Hammersmith & St. Thomas Hospital, she joined Calcutta Medical College and took charge of the hematology unit there. She was an excellent teacher and helped many students in shaping their career in hematology.<sup>[10]</sup> *Dr. Manju Dutta Chaudhuri* completed her PhD from CSTM under Prof. J.B. Chatterjea and served the Department of Hematology, N.R.S. Medical College; then joined at CSTM and retired at the capacity of HOD from the Department. She was instrumental in improving the departments at both sites. *Dr. M.M. Rakshit*, a hematologist by passion and profession, trained in hematology at CSTM, took the charge of the Hematology unit under the Department of Medicine at NRS Medical College from Dr. Sandhya Ghose and carried it forward till 1990, the last days of his service.

#### **Establishment of hematology units at the private sector (1970s–90s)<sup>[9]</sup>**

*Assembly of God Church Hospital, Calcutta* started a hematology unit under the able leadership of Brig. (Dr.) R.N. Dutta, after his retirement from the Indian Army. The first day care unit for thalassemia patients at *Bhoruka Research Center for Hematology and Blood Transfusion (BRCHBT)*, Calcutta popularly known as *Bhoruka Blood Bank* was built up by Dr. Dilip Kumar Bhattacharyya: Fondly called DKB, started where he a decent hematology research lab and blood bank. Later, two separate hematology units were developed at *Kothari Medical Centre* and *Saroj Gupta Cancer Centre & Research Institute* under the able leadership of Dr. Sharmila Chandra and Dr. R.N. Ghosh, respectively.

#### **Establishment of new hematology units at other Govt. Medical Colleges<sup>[9]</sup>**

In the late 60s, the then Government of West Bengal probably thought that, time has come when Hematology as a discipline should be spread out of the four walls of “Room. No. 26” – the famous room at CSTM which witnessed the great works and footfalls of all these legendary people. That resulted in setting up two small hematology units under the Department of Medicine at Medical College, Calcutta and the Nil Ratan Sircar Medical College. Both these units were formed in the ideal of the Hematology Department of CSTM, each of them had few indoor beds in the medicine wards, a miniature laboratory, and OPD once or twice a week.

It 1968, the first hematology unit at Medical College, Kolkata started with one consultant, a small lab and 10 beds under the Department of Medicine; Dr. Sandhya Ghose was the

first in-charge of the unit followed by Dr. R.N. Roy.<sup>[11]</sup> Started long back in 1974, the hematology unit established under the Department of Medicine at NRS Medical College was again headed by Dr. Sandhya Ghose followed by Dr. Manju Duttachaudhuri and Dr M.M. Rakshit, all of them were professionally trained at CSTM.<sup>[12]</sup>

And, as most of the legendary people were shifted from their original place of work, the Hematology Department of CSTM lacked the pace of clinical excellence and research activity for which it was once famous.

#### **THE REAWAKENING<sup>[9]</sup>**

The stage was all set for the “reawakening” when three friends from the same MBBS batch in Medical College, Calcutta dreamed off and played off regaining the lost past glory of Hematology in West Bengal. They (Dr. Utpal Choudhury, Dr. Malay Ghosh and Dr. Kanjaksha Ghosh) played the pivotal role in conceptualization and materialization of the dream. Because of the vision, dedication and commitments of these three living legends, hematology in Kolkata and West Bengal has now put its footprint in the map of India and abroad. The people of Bengal are grateful to these great masters, human beings, care giving doctors and institution builders. Their untiring efforts and whole-hearted devotion to the cause helped to shape the present day state of the art hematology departments with facilities of advanced research in two of the medical colleges in Calcutta.

#### **Medical college<sup>[12]</sup>**

In late 90s, the small hematology unit under Department of Medicine was upgraded to a separate Department of Hematology. The government of West Bengal upgraded the existing department to a center of excellence Institute of Haematology & Transfusion Medicine (IHTM) in October 2002. First postdoctoral course DM (Clinical Hematology) in West Bengal started in 2006 at IHTM and presently the department has three MCI recognized seats. *Dr. Utpal Choudhury*, after postgraduation from PGIMER (Chandigarh), visited Westminster Hospital, London for (Post-Doctoral Training) Commonwealth Medical Fellowship in Hematology and Bone Marrow Transplantation in 1986–87. After joining health service and serving for a short tenure, he joined Department of Hematology at CSTM; worked there till 1990 when he was transferred to Hematology Unit, Department of Medicine of Medical College, Kolkata. He is the founder Director of IHTM. He has more than 40 national and international publications and worked as principal investigators in several projects.

#### **NRS Medical College<sup>[11]</sup>**

Under the able leadership of Dr. Malay Kumar Ghosh, N.R.S. Medical College became the principal center for

ICMR sponsored multicentric – ‘JAY VIGYAN MISSION PROJECT’ for assessing the status of thalassemia burden in the country. DM course in Clinical Hematology started from 2009 and presently the department has three MCI recognized seats for DM (Clinical Hematology) each year. *Dr. Malay Ghosh* after passing MBBS and MD (medicine) from Medical College, Calcutta, after serving in rural Bengal for a short tenure in health service, joined CSTM; then joined NRS Medical College in mid 90s who with his untiring efforts transformed the existing unit into a comprehensive independent department sometime at the end of 2001. He led N.R.S. Medical college to be the first Govt. Medical College in West Bengal to start hemopoietic stem cell transplantation (BMT) in 2009. He was an hard task master and worked persistently to elevate hematology care in West Bengal to the present level. He had several research projects to his credits especially on hemoglobinopathies and as a co-investigator with the NIIH team he described a deletional variant of alpha thal gene called “alpha Kol del”<sup>[13]</sup>

Both the centers are now having, in addition to all basic hematological investigations, facilities for tests of hemostasis and thrombosis, leukemia Cytochemistries, immunophenotyping, hemoglobinopathy work up, molecular study for thalassemia mutation and prenatal diagnostic services for thalassemia, etc. Both the centers, considered as state of the art bone marrow transplantation units, are also nodal centers for the control of thalassemia in the state. Till date, these two institutes have produced 40 odd number of clinical hematologists who are working in different parts of India and abroad. *Dr. Kanjaksha Ghosh*, a great intellectual and multifaceted personality, joined as Assistant Director at National Institute of Immunohematology (NIIH), Mumbai in 1994; and in a short span of time elevated as the Director of the Institute. *Dr. Ghosh* is credited with 776 publications in various national and international journals of repute and has also written 31 chapters in different books and monographs. Though he mostly worked in a place far away from West Bengal, but in truest sense he was instrumental in upgrading hematology laboratory and education in both the institutes. He is the true pioneer of multidisciplinary research and the inspiration to junior colleagues.<sup>[14]</sup>

## THE RECENT YEARS

Until 1990s, with few exceptions, hematology was being practiced in government sector. The whole landscape changed thereafter when a number of young hematologists then joined and developed laboratory and clinical practice in Kolkata, West Bengal. Hematology unit of *Ram Krishna Mission Seva Pratishthan, Kothari Medical center, peerless Hospital, Apollo Gleanegles Hospital, Advanced Medicare & Research Institute (AMRI), Fortis Medical Center, Ruby General Hospital* are worth mentioning in this respect. Established in 2011, *Tata Medical Centre (TMC) Kolkata* has the mission to

promote Prevention, Early Diagnosis, Treatment, Rehabilitation, Palliation and Research for cancer patients including hematological malignancies. TMC possesses a state-of-the-art bone marrow transplant unit with 9 beds. TMC has the first “blood irradiator” in the whole of Eastern India, essential for transfusion in immuno-compromised patients.<sup>[15]</sup> TMC Kolkata have started the DNB (Clinical Hematology) course in 2019 for three years teaching and training in hematology. *Dr. Mammen Chandy*, after retirement from CMC Vellore, joined as the Director at TMC Kolkata. *Dr. Mammen* has enormous contribution to every aspect of hematology training, teaching, service and research. He is often affectionately considered the “father of allogeneic stem cell transplant in India.”<sup>[16]</sup> *Department Of Immunohaematology And Blood Transfusion (Blood Bank), Medical College (Kolkata)* has made it possible to get different blood components and also started antibody screening of the thalassemia patients at large. They are also performing the different procedures essential in hematology care, e.g., plasmapheresis and therapeutic plasma exchange, cryopreservation of stem cells and therapeutic leukoreduction.<sup>[17]</sup>

## HEMATOLOGY RESEARCH: Bench to bedside<sup>[8,9]</sup>

In the present days, hematology research not restricted to the walls of the above mentioned departments only. There is active participation of learned scientists from basic sciences who are involved in unveiling some of the many unknown mechanisms in pathobiology of different hematological conditions, e.g., cell cycle regulation, apoptosis, epigenetic mechanisms, molecular biology. Institutes like, *Bose Institute, Indian Institute of Chemical Biology (IICB), Saha Institute of Nuclear Physics (SINP), Science College (Rajabazar Campus) under Calcutta University* and many others have experts on different fields of basic sciences who are working on these areas. Our medical fraternity need to interact with these institutes to carry out hematology research and should learn how to apply the knowledge gained from basic scientific research to develop clinical applications, such as new treatments, devices, or drugs.

## Non-Government Organizations (NGOs)<sup>[9]</sup>

There are many non-profit organizations, formed mainly by the hematologists and also many famous scientists from basic sciences with the vision of cultivation and spread of hematology education amongst medical professionals from different disciplines. *Kolkata Haematology Education & Research Initiative (KHERI)*, is such an Initiative for patients with blood disorders so that they may thrive and perform in life and to create awareness among public and facilitate screening and prevention programs for control of the diseases. *Society for Education Research in Clinical Hematology (SERCH)*, another NGO of the hematologist

from Kolkata, works on hematology education and research. It regularly conducts CMEs, seminars, highlights of different international events in hematology throughout the year. **Bengal Society of Hematology** (BSH; website: [www.bsh.org.in](http://www.bsh.org.in).) is a professional body of consultant hematologists formed in 2014. Its members are physicians/pathologist with postgraduate qualifications in different specialties. The organization conducts various educational and professional activities for its members throughout the year. With the mission and vision to propagate the knowledge of hematology, it organizes conferences, seminars, tutorials, CME's on a regular basis not only in Kolkata but also in the remotest medical colleges of West Bengal. This year, the BSH is publishing the first issue of its official scientific publication "*Journal Of Hematology and Allied Sciences (JHAS)*".

### EPILOGUE

Due to lack of data in the published format, the present author may have certainly missed few or many others contributing in the field of hematology in West Bengal and regret for the same. And, it is with difficulty, the author has gathered the name of many of the luminaries who contributed a lot and enriched the field of hematology both in clinical aspect as well as in the research field. May be, many are left whom the author has failed to mention. There are many practicing hematologists who actually contributed a lot in the past and many young hematologists spread all over India are carrying the flag of hematology in Bengal.

### ACKNOWLEDGEMENTS

The author is grateful to the living legends in hematology who helped through personal communications in all possible ways to gather information and recollect the lost past, and focus on the present also to vision the future.

### Declaration of patient consent

Patient's consent not required as there are no patients in this study.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

### REFERENCES

1. Swarup Mitra S. Jyoti Bhusan Chatterjea. *Blood* 1972;39: 890–1. doi:10.1182/blood.V39.6.890.890. PMID:4555035.
2. Sen NN, Basu AK. "Trends in Hematology: J.B. Chatterjea memorial volume." Bibliography of Prof. J.B. Chatterjea 1975, p. 483–502.

3. N. N. Sen (editor) (1975). "Trends in Haematology". J.B. Chatterjea Memorial volume, 1975, p. 506. Libraries Australia ID 9325225
4. J. B. Chatterjea (1919–1972). *Bull Calcutta Sch Trop Med* 1972;20:18. PMID:4581087.
5. In memoriam: Dr. J.B. Chatterjea. *Indian J Public Health* 1972 Apr;16:102–3. PMID:4568365.
6. Obituary. Dr. Jyoti Bhusan Chatterjea. *Indian J Med Res* 1972 Jul;60:v. PMID:574911.
7. M. Ghosh. Dr. J.B.Chatterjea. In; *Indian legends in Hematology*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013;2013:23–4.
8. K. Ghosh Haematology research in India: past, present and future. *Indian J Hematol Blood Transfus* 2011;27:55–64. doi:10.1007/s12288-011-0062-6.
9. PK Mandal. Development of Hematology in West Bengal. BeSHCON 2019: Prof. J.B.Chatterjea centenary celebration. Published by Bengal Society of Hematology, 2019.
10. Chaudhuri U. Dr. Sandhya Ghosh. In; *Indian legends in Hematology*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013;2013:47.
11. Bhattacharyya M. NRS Medical College. In; *Hematology Departments In India*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013,2013;33–6.
12. Chaudhuri U. Institute of Haematology & Transfusion Medicine (IHTM; Medical College, Kolkata). In; *Hematology Departments In India*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013,2013;29–32.
13. Ghosh K. Prof. Malay Ghosh. In; *Indian legends in Hematology*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013;2013:44–6.
14. Shetty S. Kanjaksha Ghosh. In; *Indian legends in Hematology*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013;2013:42–3.
15. Parihar M, Mishra D, Nair R, *et al*. Tata Medical Centre (TMC) Kolkata. In, *Hematology Departments In India*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013,2013; 37–44.
16. Mathews V. Dr. Mammen Chandy. In; *Indian legends in Hematology*. Agarwal MB (Ed.); published by Indian Society of Hematology and Transfusion Medicine (ISHBT), HEMATOCON 2013;2013:47.
17. Department Of Immunohaematology And Blood Transfusion (Blood Bank), Medical College (Kolkata), Internet (accessed May 16, 2021). [https://www.medicalcollegekolkata.in/main/page/Blood\\_Bankc5a28a](https://www.medicalcollegekolkata.in/main/page/Blood_Bankc5a28a)

**How to cite this article:** Mandal PK. Brief history of hematology care and research in West Bengal, India. *J Hematol Allied Sci* 2021;1(1):7–11.