

Curriculum Vitae

Name: Dr. Ritu Gupta. MBBS, MD, DNB, MNAMS, FICH, FRCPath, FNASc

Date of Birth: April 4, 1972

Designation: Professor & Head, Laboratory Oncology Unit, Dr. B.R.A. IRCH, AIIMS, New Delhi

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Life membership No. (ISHBT): L-729

Professional Qualifications:

| Degree | Institution | Year |
|-------------------|--|------|
| M.B.B.S. | J.L.N. Medical College, Ajmer, University of Rajasthan | 1995 |
| M.D (Pathology) | K.M.C. Manipal, MAHE | 1999 |
| D.N.B (Pathology) | National Board of Examination, New Delhi | 1999 |
| FRCPath | The Royal College of Pathologists, London | 2022 |

Employment Details:

| Designation | Date of Joining | Date of Leaving |
|--|------------------|------------------|
| Professor, Laboratory Oncology Unit, AIIMS, Delhi | July 1, 2016 | Continuing |
| Additional Professor, Laboratory Oncology Unit, AIIMS, Delhi | July 1, 2012 | June 30, 2016 |
| Associate Professor, Laboratory Oncology Unit, AIIMS, Delhi | July 1, 2009 | June 30, 2012 |
| Assistant Professor, Laboratory Oncology Unit, AIIMS, Delhi | October 18, 2005 | June 30, 2009 |
| Assistant Professor of Hematology, SGPGIMS, Lucknow | August 19, 2003 | October 17, 2005 |
| Senior Resident, Laboratory Oncology, AIIMS, Delhi | August 19, 2000 | August 18, 2003 |

Publications: Full list enclosed at the end of this document.

Links to pubmed and Google scholar are as follows:

https://www.ncbi.nlm.nih.gov/myncbi/111_AcrcwpnQ7/bibliography/public

<https://scholar.google.co.in/citations?hl=en&user=ICUcieAAAAAJ>

Citations: 3075; h-index: 30; i-10 index: 96

Full length Journal Publications >200

Chapters in Books: 7; Books/Journals Edited: 3; Datasets Released: 8

Invited Lectures: 110; International=5; National 105

Patents:

Indian Patent Application No.: 201611031953

Date of publishing: September 30, 2016

Date of Grant of Patent: March 2024 under patent number 519991

Title: System and Method for Minimal Residual Disease (MRD) Detection in Acute Lymphoblastic Leukemia

Inventors: Anubha Gupta, Ritu Gupta, Naushad Ansari

Awards/Honors

1. Scientific **High Level Visiting Fellowship (SSHN) 2024 (Medical Applied Research and Practice)** by French Institute in India (French Embassy in India) to visit Necker Enfants Malades Hospital, GHU-Ouest, Paris, France
2. Conferred **Fellowship of the Indian College of Pathologists (FICP) 2024** by the Indian College of Pathologists (ICP)
3. **Travel Award from ICKSH 2024 for research work** “Leukemic stem cells in acute myeloid leukemia further refine treatment outcomes in ELN molecular risk groups”
4. **Best Oral Paper award** at the 6th Annual Conference of the Indian Myeloma Academic Groupe (IMAGE) “**IMC 2024**” for paper on “Decoding Multiple Myeloma Pathogenesis: Discovery of Oncogenic and Transformative Events with a Targeted Panel of 282 Genes” (Jan 12-14, 2024)
5. **Best Oral Paper award at Haematocon 2023** for paper on “Leukemic stem cells emerged as independent predictor of early and long-term treatment outcomes across conventional and ELN genetic risk group in acute myeloid leukemia.”
6. Conferred **Fellowship of the Indian College of Haematology (FICH) 2023** by the Indian Society of Haematology & Transfusion Medicine (ISHBT)
7. **Visiting Senior Scientist at Mayo Clinic, Rochester, Minnesota, USA** (March-June 2023-ICMR-DHR International Fellowship for Senior Indian Biomedical Scientists)
8. **Visiting Professor at Dana Farber Cancer Institute, Harvard Medical School, Boston, USA** (Sep 26- Oct 23, 2022- AIIMS International Fellowship 2022)
9. **Berend Houwen Travel Award 2022** for “Single cell gene expression analysis of CD34+ enriched leukemic cells reveal intra and inter-patient transcriptional heterogeneity in pediatric Acute myeloid leukemia” at the XXXVth International Symposium on Technological innovations in Laboratory Hematology (Sep 7-10, 2022) organized by International Society for Laboratory Hematology (ISLH)
10. **Admitted as Fellow, Royal College of Pathologists, London, UK (FRCPath)- 2022**
11. **Elected Fellow, National Academy of Sciences, India (FNASc) - 2021**
12. **Berend Houwen Award 2021** for “Evaluation of kinetics and single cell sequencing-based phenotype of Leukemic Stem Cells (LSCs) in Acute Myeloid Leukemia” at the XXXIVth International Symposium on Technological innovations in Laboratory Hematology Virtual Meeting (May 4-7, 2021) organized by International Society for Laboratory Hematology (ISLH)

13. **Oral Paper award at Haematocon 2020** for paper on “Impact of depth of response and MRD status post-transplant on long term survival in multiple myeloma”
14. **Leukemic Stem Cells in AML: Best two papers invited for oral presentation at ESH virtual conference 2020**
15. **AIIMS Excellence Research Award 2021** (First Prize) for publication titled “Branching clonal evolution patterns predominate mutational landscape in Multiple Myeloma”.
16. **AIIMS Oncology Research Award 2020** (First Prize) for publication titled “RNA-Seq profiling of deregulated miRs in CLL and their impact on clinical outcome”.
17. **AIIMS Oncology Research Award 2019** (Second Prize) for publication titled “Rapid Identification of Key Copy Number Alterations in B- and T-Cell Acute Lymphoblastic Leukemia by Digital Multiplex Ligation-Dependent Probe Amplification.”
18. **Visiting Professor**, Department of Hematopathology, All India Institute of Medical Sciences (AIIMS), Rishikesh (2019)
19. **Indian Myeloma Congress 2019 Award** (Second Prize) for paper on “Estimation of CNVs In Multiple Myeloma by Next Generation Sequencing Based Digital MLPA” at the 2nd Annual Conference of the Indian Myeloma Academic Group (May 11-12, 2019)
20. **AIIMS Oncology Research Award 2018** (Third Prize) for publication titled “Nucleic acid-based risk assessment and staging for clinical practice in multiple myeloma”
21. Nominated to 34th Ernst Klenk Symposium on “Épigenetics: Basic Principals & Clinical Applications”, Cologne, Germany (October 2018)
22. **AIIMS Excellence Research Award 2017** (Third Prize) for basic research publication on “Genome-wide DNA methylation profiling integrated with gene expression profiling identifies PAX9 as a novel prognostic marker in chronic lymphocytic leukemia”
23. Second prize for poster on ‘Novel Level Set Framework for Plasma Cell Segmentation from Microscopic Images of Multiple Myeloma’ at the “Multiple Myeloma-State of the Art 2016” conference held at PGIMER, Chandigarh, India
24. Second prize for poster on ‘Molecular aberrations in Chronic Lymphocytic Leukemia (CLL) using MLPA’ at the 5th Annual Conference of Molecular Pathologists of India (MPAI 2016)
25. ‘Markers of angiogenesis in multiple myeloma’ was judged in best 20 abstracts presented at the 11th Euroconference on Clinical Cell Analysis (2011) at Dublin, Ireland.
26. **Travel Award ASH from American Society of Hematology** (2008)
27. **'Smt. Kunti Devi Mehrotra award'** for best published research work in India (2005) for the publication “Flow cytometric analysis of CD5 positive B-cells- a frame of reference for minimal residual disease in Chronic lymphocytic leukemia”
28. **Young Investigator award of SERC** (2005-06) for “Immunophenotypic characterization of plasma cells by flow cytometry in health & disease with particular reference to plasma cell myeloma”
29. **Second prize in Inter-College Lecture Competition on Recent advances in medical Sciences, Karnataka** (1998)
30. **Gold Medal in Mathematics, CBSE** (1987)

Fellowships of Professional Bodies/Organizations

1. Fellow of the National Academy of Science (NASI), India (FNASc)
2. Fellow of the Royal College of Pathologists, London (FRCPath)
3. Fellow of the Indian College of Haematology (FICH)
4. Fellow of the Indian College of Pathologists (FICP)
5. Fellow of International Medical Science Academy (FIMSA)

Membership of Professional Bodies/Organizations

1. Member, International Society of Laboratory Hematology (ISLH) since 2021
2. Member, International Myeloma Society (2017 onwards)
3. Life member of Indian Academy of Biomedical Sciences (315/2021)
4. Life member of Indian society of Pathology & Microbiology (L-2323)
5. Life member of Indian society of Hematology & Transfusion Medicine (L-729)
6. Life member of The Cytometry Society (L-1025)
7. Life member of Indian Association of Cancer Research (LM-882)
8. Life member of Molecular Pathologists Association of India (MPAI)
9. Life member of Indian Myeloma Academic Groupe (Image)

Administrative/Academic Assignments (Extramural):

1. Member, DDC committee on Neoplastic Hematolymphoid Cells (H43), Clinical and Laboratory Standards Institute (CLSI) (2024)
2. Member of Central Monitoring Committee, BMW, Ministry of Environment, Forest & Climate Change, India (2021-2027)
3. Chairperson, Working Group-Cytogenetics, Flow Cytometry, Molecular Testing to review NABL 112 in accordance with ISO 15189:2022 (2023-2024)
4. Member, Working Group- Histopathology and Cytopathology to review NABL 112 in accordance with ISO 15189:2022 (2023-2024)
5. Member 'Cancer Biology Task Force', DBT, India (2022-2025)
6. Member of DST-Inspire Faculty Fellowship Committee, DST, India (2022-2025)
7. President of The Cytometry Society (2021-2023)
8. Member of Editorial Board, Translational Oncology (Elsevier) 2021 onwards
9. Member of Editorial Board, Cancer Treatment & Research Communications (Elsevier) 2021 onwards
10. Member of DBT-Ramalingaswamy Re-entry Fellowship Committee, DBT, India (2020)
11. Member 'Cancer Biology Expert Committee, ICMR, India (2019-2023)
12. Vice-President of The Cytometry Society (TCS), India (2019-2021)
13. Visiting Professor, Hematopathology, AIIMS, Rishikesh (2019)
14. Member 'Cancer Biology Task Force', DBT, India (2016-2018)
15. Member of Scientific advisory committee of School of Life Sciences, JNU, New Delhi, India (2017-2019)

16. Member of Innovative Young Biotechnology Award (IYBA) Task Force (2016-2019), DBT, India
17. Treasurer of The Cytometry Society (TCS), India (2015-2019)
18. Served as member of the Indo-US task force of DBT (2016)
19. Lead Assessor (Since 2016) & Technical Assessor (Since 2013) for National Accreditation Board for Testing & Calibration Laboratories (NABL)

Administrative/Academic Assignments (Intramural):

1. Member, Dean Research Committee, AIIMS, New Delhi (2024-2026)
2. Member, Project Review Committee-Basic Sciences, AIIMS, New Delhi (2020-2024)
3. Chairperson, Internal complaints committee for sexual harassment of women at workplace (ICCSHWW), NCI-AIIMS, Delhi, India (2022-2023)
4. Member, Dean Research Committee, AIIMS, New Delhi (2018-2021)
5. Member, Core Committee of Central Core Research facility (CCRF), AIIMS, New Delhi (Since 2018)
6. Member, Genomics Facility Committee, CCRF, AIIMS, New Delhi (Since 2018)
7. Member, FACS Facility Committee, CCRF, AIIMS, New Delhi (Since 2018)
8. Member Secretary of Laboratory Advisory Committee, National Cancer Institute (NCI), India (2015)
9. Member, SPC, Dr B.R.A. IRCH, AIIMS, New Delhi & NCI-Jhajjar, AIIMS (2017-2022)

Academic Activities

A. Invited lectures (International)

1. **“Revolutionizing Cancer Paradigms-Integrating AI/DL to Harness Best of Biomarkers”** at the one-day Lead-Up event to US-India Cancer Moonshot initiative organized by Department of Biotechnology and U.S. Embassy, New Delhi at NCI-AIIMS Jhajjar (May 28, 2024)
2. **“Sharing experience of setting 10-12 color Flow MRD assay in Multiple Myeloma”** at the clinical user group meeting “Advances in Clinical Flow Cytometry (ACFC): **“Assessment of MRD - Assay Validation”** (February 2022)
3. **“Improving the risk stratification and staging in multiple myeloma by integrating machine learning and ethnicity into clinical diagnostics”** at the VII EAFO Hematology Forum 2022 (January 7, 2022)
4. **“Clinical impact of ethnic differences on multiple myeloma risk prediction in the era of genomics and novel agents”** at the American Society of Hematology (ASH) Scientific Workshop on Risk Prediction and Assessment: Discovery, Implementation and Disparities at the 63rd ASH annual meeting and exposition, USA (December 2021).
5. **“Role of flow cytometry in plasma cell proliferative disorders”** at the special symposium on Advancement of Cytometry in Asia in the XIXth Annual meeting of Japanese Cytometry Society at Matsue, Japan (June 2009)

B. Invited Lectures (National)

1. **“Monitoring disease response and outcomes in multiple myeloma”** at the ‘1st Annual Conference of UP Hematology Group’, Lucknow (April 27-28, 2024)
2. **“Chronic Lymphoproliferative disorders & multiple myeloma”** at the ‘Diagnostic Week’ (April 1-7, 2024) organized by Medical Education and Learning Point (MELAP)
3. **“Role of Single Cell Sequencing in translational research”** at the MPAICON 2024 at AIIMS, New Delhi (Feb 16-18, 2024)
4. **“Understanding the challenges of achieving a timely diagnosis”** at the CMIE healthcare innovation boot camp on oncology (Jan 31-Feb 3, 2024)
5. **“WHO update on diagnosis of acute leukemia-Bridging the intersection of immunophenotyping, cytogenetics and NGS”** at the Indian Leukemia Academy (Jan 18-21, 2024)
6. **“Diagnostic and monitoring approaches in multiple myeloma”** at the IMC2024 at Pune, Maharashtra (Jan 12-14, 2024)
7. **“Approach to MRD in MM & Case Studies”** at the **71st Annual Conference of IAPM & IAP-ID** at AIIMS, New Delhi (December 6-10, 2023)
8. **“Dissecting hematological malignancies with single cell approach”** at the 15th TCS Annual conference & Workshops at AIIMS, New Delhi (26-29 October 2023)
9. **“Approach to Myeloma MRD: Panel design, template generation, internal controls & analysis”** at the 15th TCS Annual conference & Workshops at AIIMS, New Delhi (26-29 October 2023)

10. **“Transforming Risk Stratification in Oncology”** at the 7th International conference on translational research (ICTR) at AIIMS, New Delhi (16-18 October 2023)
11. **“Integrating Genomics & AI for Cancer Research & Risk Stratification”** at the 4th ICGA Conference 2023, at Indian Institute of Science Education and Research (IISER) Pune (6-8 October 2023).
12. **"MRD by Flow cytometry: AIIMS Data"** at the 5th Indian Myeloma Congress at St John's Medical College, Bengaluru (January 2023)
13. **“Artificial Intelligence and Risk Stratification in Oncology”** at the Biological Sciences and Bioengineering (BSBE) Winter Symposium on "Recent Trends in Cancer Research and Precision Medicine" at IIT, Kanpur (Dec 16-18, 2022)
14. **“Light Chain assays”** at the **National CME of ACCLMPCON** on “Tumour Biomarkers- Present and Future” organized by AIIMS, Raipur, India (December 10, 2022)
15. **“Molecular Diagnostics in Hemato-Oncology”** at the Hematopathology CME organized by Uttarakhand Chapter of IAPM at AIIMS, Rishikesh, India (December 10, 2022)
16. **“Translational impact of molecular diagnostics in AML”** at the 25th Annual Pediatric Hematology-Oncology Conference (PHOCON 2022), New Delhi, India (November 19-20, 2022)
17. **“Flow Cytometry of AML: Exploring Beyond Routine Diagnostics”** at the 14th Annual conference of The Cytometry Society (TCS) India (October 14-16, 2022)
18. **“Flow Cytometry in Multiple Myeloma: Case Studies”** at the Online teaching module of The Cytometry Society (TCS) India (September 27, 2022)
19. **“Genomics in Multiple Myeloma”** at the 9th Annual Meeting of the Molecular Pathologists Association of India (MPAICON) at Ahmedabad (August 6-7, 2022)
20. **“Optimized AI Risk Stratification in Oncology”** at the AICTE faculty development program on "AI in Healthcare" at IIIT, Delhi (June. 2022)
21. **“Genomics of Multiple Myeloma: Relevance in Clinical Practice”** at the AICTE online Atal Academy Faculty Development Program on "Cancer Genomics in Healthcare System" (Nov. 2021)
22. **“Diagnosis of B cell lymphoma by flow cytometry”** at the Cytocon 2020-21: 50th Annual Conference of Indian Academy of Cytologists (November 2021)
23. **“Flow Cytometry in multiple myeloma”** at the Online workshop on Application of Flow cytometry in Health Sciences organized by ICMR-NIRRH-TCS (November 2021)
24. **“Plasma cell neoplasms and Serum electrophoresis”** at the Online teaching program for Post-graduates in Pathology (November 2021)
25. **“Clonal Heterogeneity in multiple myeloma”** at the 13th Annual conference of The Cytometry Society (TCS) India (October 2021)
26. **“Case studies in Acute Myeloid Leukemia”** at the clinical user group meeting “Advances in Clinical Flow Cytometry (ACFC) (September 2021)
27. **“Role of minimal residual disease in the management of multiple myeloma”** at the Virtual 4th Indian Myeloma Congress 2021 (April 2021)

28. **“When and how should we monitor residual disease in myeloma”** at the Flow Cytometry Workshop of Virtual 4th Indian Myeloma Congress 2021 (April 2021)
29. **“Molecular Diagnostics in Hemato-Oncology”** at the Kasturba Medical College, Manipal as a Guest Speaker (April 2021)
30. **“Risk Stratification in Multiple Myeloma: Established & Novel Biomarkers”** at the symposium titled “Molecular Profiling Shaping the Treatment Paradigm In Hematologic Malignancies” (February 20, 2021)
31. **“High Risk CLL”** at the Hematology Cancer Consortium (HCC) Educational webinar on CLL (December 19, 2020)
32. **“Challenges with current response criteria and MRD evaluation in Myeloma in India”** at the 3rd Indian Myeloma Congress 2020, Nizam Institute of Medical Sciences, Hyderabad (January 2020)
33. **“Do and Don’ts of Flow cytometry of MRD in Myeloma”** at the 3rd Indian Myeloma Congress 2020, Nizam Institute of Medical Sciences, Hyderabad (January 2020)
34. **“Diagnostics in Multiple Myeloma-Past, Present & the Future”** at the AIIMS, Rishikesh (November 2019)
35. **“Molecular Cytogenetics in Hemato-Oncology”** at the AIIMS, Rishikesh as a Guest Speaker (November 2019)
36. **“Clinical relevance of MRD in multiple myeloma”** at the 12th TCS Annual Conference and Flow Cytometry Workshops 2019, SGPGIMS, Lucknow
37. **“MM MRD Standardization- AIIMS Experience”** at the 12th TCS Annual Conference and Flow Cytometry Workshops 2019, SGPGIMS, Lucknow
38. **“FCMI of ALL- A Case based discussion”** at the 12th TCS Annual Conference and Flow Cytometry Workshops 2019, SGPGIMS, Lucknow
39. **“Leukemic Stem Cells in Acute Leukemia”** at the 3rd National Update in Hemato-Pathology 2019, Mumbai
40. **“Evolving Scope & Promises of Next Generation Analytics in Oncology”** at the Next Generation Diagnostics Summit 2019, Hyderabad
41. **“Molecular methods for Ig& TCR gene rearrangements and flow cytometry for MRD”** at international update on Multiple Myeloma and plasma cell related disorders, Tata Memorial Centre, Kolkata (September 2018).
42. **“Association of Epigenetic alteration of Myosin Light Chain Kinase (MYLK) with Aggressive Clinical Course in Chronic Lymphocytic Leukemia”** at 34th Ernst – Klenk Symposium, Center for Molecular Medicine, University of Cologne (October 2018).
43. **“Challenges in Myeloma MRD Reporting in Indian Setting: Consensus Building”** at 11th TCS Annual Conference & Flow Cytometry Workshop – (October 2018).
44. **“Molecular Monitoring in CML”** at 2nd Annual conference of Research **“Minimal Residual Disease in B-Lineage Acute Lymphoblastic Leukemia”** at 15th advanced clinical flow cytometry workshop, ACTREC, Mumbai (August 2018).

45. **“MRD in Multiple Myeloma - Case based approach”** at Advances in Clinical Flow Cytometry: A User Perspective. SGRH, New Delhi (August 2018)
46. **“B-ALL MRD: Case Study”** at the 15th advanced clinical flow cytometry workshop at ACTREC, Mumbai (August 2018)
47. **“MRD in Multiple Myeloma - case based discussion”** at the 22nd ISHBT-EHA tutorial 2018, Lucknow (February, 2018)
48. **“Multiple Myeloma”** at the 19th Indo-US cytometry workshop (February 2018)
49. **“Applications of Flow Cytometry in Medical Sciences”** invited lecture at AIIMS, Rishikesh (February, 2018)
50. **“Flow cytometry in lymphoproliferative disorders and multiple myeloma”** at the PATHCON & LAB EXPO 2017 at New Delhi (December 2017)
51. **“MRDs in Multiple Myeloma: Laboratory to Bedside”** at the AIIMS Hem-Onc Update 2017 at AIIMS, Delhi (November 2017)
52. **“Practical issues in Multiple Myeloma: Laboratory to Bedside”** at the Haematocon-58th Annual conference of ISHBT, Guwahati (November 2017)
53. **“Monoclonal gammopathies – Case based panel discussion”** at the Haematocon-58th Annual conference of ISHBT, Guwahati (November 2017)
54. **“WHO 2016 clarification of hematolymphoid malignancies – A case study”** at the Haematocon-58th Annual conference of ISHBT, Guwahati (November, 2017)
55. **“What’s new in acute leukemia Immunophenotyping”** at the 10th annual meeting of The Cytometry Society at Trivandrum (October, 2017)
56. **“Interesting cases of acute leukemia”** at the 10th annual meeting of The Cytometry Society at Trivandrum (October, 2017)
57. **“Approach to B-chronic lympho-proliferative disorders”** at the 10th annual meeting of The Cytometry Society at Trivandrum (October, 2017)
58. **“CLPD- Interesting cases”** at the 10th annual meeting of The Cytometry Society at Trivandrum (October, 2017)
59. **“Diagnostics in multiple myeloma – past, present and the future”** at the National update in Hematopathology at Mumbai (August, 2017)
60. **“MRD in Multiple Myeloma (Pre-analytical factors)”** at the 8th Advanced TCS Workshop on Flow Cytometry, Delhi-NCR (April 2017)
61. **“MRD Analysis in Multiple Myeloma & Case Studies”** at the 8th Advanced TCS Workshop on Flow Cytometry, Delhi-NCR (April 2017)
62. **“Disease Monitoring in Multiple Myeloma”** at the “Multiple Myeloma-State of the Art 2016” held at PGIMS, Chandigarh, India (Sep-Oct, 2016)
63. **“Multiple Myeloma: Diagnostic Algorithm in the Molecular Era”** at the CME series on Hemato-Oncopathology”, AIIMS, New Delhi (July 2016)
64. **“CME on Multicolor Immunophenotyping of Acute & Chronic Leukemia”** at “FLOWCYTO-2016” CME held at Srinagar (April 2, 2016)

65. **“Accreditation in Flow Cytometry”** at the CME on ‘Attaining and Maintaining Accreditation - the challenges along the path’ organized by Sir Ganga Ram Hospital, Delhi (Feb 4, 2016)
66. **“Plasma Cell Flow Cytometry”** at the 7th Advanced TCS Flow Cytometry Workshop on Hematological Malignancies: Delhi-NCR (Feb 2015)
67. **“Minimal Residual Disease in Multiple Myeloma”** at the “Mini-Symposia on Multiple Myeloma”, AIIMS, New Delhi (January 2016)
68. **“Minimal Residual Disease in Acute leukemia: Requirements & Pitfalls”** at the “Flow Cytometry CME & Workshop”, KMC, Manipal (January 2016)
69. **“NABL Requirements for Flow Cytometry Laboratory”** at the “Flow Cytometry CME & Workshop”, KMC, Manipal (January 2016)
70. **“Flow Cytometry Analysis Software & Data Analysis”** at the “Flow Cytometry CME & Workshop”, KMC, Manipal (January 2016)
71. **“Multicolor Immunophenotyping in Acute leukemia”** at the 56th Annual conference of ISHBT, Bangalore (November, 2015)
72. **“Setting up multi-color flow cytometric assay in leukemia”** at the 56th Annual conference of ISHBT, Bangalore (November, 2015)
73. **“Minimal Residual Disease in Multiple Myeloma-Indian Data”** at the 8th annual meeting of The Cytometry Society at Mumbai (October, 2015)
74. **“Role of Flow Cytometry in Diffuse large B-cell Lymphoma”** at the “Symposia on Diffuse large B-cell Lymphoma”, AIIMS, New Delhi (September 2015)
75. **“Serum Electrophoresis and Immunofixation”** at the 5th Basic Hematopathology Course at Tata Memorial Hospital, Mumbai (June 2015)
76. **‘Flow Cytometry in diagnosis and classification of acute leukemia’** at the 6th Advanced TCS Flow Cytometry Workshop on Hematological Malignancies: Delhi-NCR (February 2015)
77. **‘Diagnostic spectrum of chronic lymphoproliferative disorders’** at the 6th Advanced TCS Flow Cytometry Workshop on Hematological Malignancies: Delhi-NCR (February 2015)
78. **“Regulatory T-cells in Cancer”** at the International Workshop at CU-BD Centre of Excellence in Nanoscience & Nanotechnology (December 2014)
79. **“Serum Free light Chain Assay in Multiple Myeloma”** at the 55th Annual conference of ISHBT, Hyderabad (November 2014)
80. **‘Flow Cytometry in Plasma Cell Proliferative disorders’** at the 5th Advanced TCS Flow Cytometry Workshop on Hematological Malignancies: Delhi-NCR (March 2014)
81. **“Basic Principles, Interpretation & Clinical Utility of Flow Cytometry”** at the Symposium on Lab Techniques in Oncology at Dr. B.R.A.IRCH, AIIMS (January 2014)
82. **“Flow Cytometry in diagnosis and classification of Acute leukemia”** at the 1st Regional CME on Clinical Applications of Flow Cytometry organized by SMS Medical College, Jaipur, Rajasthan (January 2014)
83. Faculty of **“Meet The Professor: MRD in Acute leukemia”** at the 54th Annual conference of ISHBT, Mumbai (November, 2013)

84. **‘Regulatory T-cells in Hematological malignancies’** at the 14th Indo-US Flow Cytometry workshop & Clinical Symposium at Delhi-NCR (October, 2013)
85. **‘Flow cytometry in chronic lymphoproliferative disorders’** at Symposium & workshop on Multiparametric flow cytometry in Hematological disorders; SGPGIMS, Lucknow (September 2013)
86. **‘Flow cytometry in Plasma cell dyscrasias’** at Symposium & workshop on Multiparametric flow cytometry in Hematological disorders; SGPGIMS, Lucknow (September 2013)
87. **‘Flow Cytometry in Plasma Cell Proliferative disorders’** at the 4th Advanced TCS Flow Cytometry Workshop on Hematological Malignancies: Delhi-NCR (January, 2013)
88. **“Minimal Residual Disease in Acute Leukemia”** at the “Wet Workshop on Flow Cytometry: TCS-2012” at SCTIMST & RCC, Thiruvananthapuram, Kerala (May, 2012)
89. **“Applications of Flow Cytometry in Clinical Practice”** at the “NERCON 2012” at Assam Medical College, Dibrugarh (April 2012)
90. **“Flow Cytometry in Plasma Cell Proliferative disorders”** at the 3rd Advanced TCS Flow Cytometry Workshop on Hematological Malignancies (February, 2012) at Delhi-NCR, India.
91. **“Diagnostic spectrum of CLPD: Solving the Puzzle”** at the 52nd annual conference of The ISHTM at Chandigarh (November, 2011)
92. **“Plasma Cell proliferative Disorders: Scope & Challenges with Multiparametric Flow Cytometry”** at the 4th annual meeting of The Cytometry Society at Chandigarh (October, 2011)
93. **“Myeloma flow”** at the Clinical Flow Cytometry-User Group meeting organized by Delhi Society of Haematology & FILCG at Medanta, The Medicity, Gurgaon (August, 2011)
94. **“Myeloma flow- challenges”** at the Advanced TCS Flow Cytometry Workshop on Hematological Malignancies at Delhi-NCR, India (December 2010)
95. **“Enigma of biological heterogeneity in CLL”** at the National Workshop on ‘Molecular Cytogenetics: Hematological Malignancy’ at AIIMS, New Delhi, India (November 2010)
96. **“Minimal residual disease in acute leukemia”** at the Advanced TCS Flow Cytometry Workshop on Hematological Malignancies at Delhi-NCR, India (Mar-Apr 2010)
97. **“Prognostic markers in chronic lymphocytic leukemia”** at the Advanced TCS Flow Cytometry Workshop on Hematological Malignancies at Delhi-NCR, India (Mar-Apr 2010)
98. **“Myeloma flow-scope, challenges and way forward”** at the Advanced TCS Flow Cytometry Workshop on Hematological Malignancies at Delhi-NCR, India (Mar-Apr 2010)
99. **“Flow Cytometry in lymphoma diagnosis”** at the Nagpur Lymphoma Conference at Nagpur, India (November 2009)
100. **“Role of flow cytometry in plasma cell proliferative disorders”** at the special symposium on Advancement of Cytometry in Asia in the XIXth Annual meeting of Japanese Cytometry Society at Matsue, Japan (June 2009)
101. **‘Flow Cytometry for RBC Disorders’** at the XVth National CME in Haematology & Haemato-Oncology at Mumbai (January 2009)

102. **“Application of flow cytometry in Transfusion Medicine”** at the ‘Transcon 2008, the 33rd National Conference of Indian Society of Blood Transfusion & Immunohaematology at SGPGIMS, Lucknow, India (December 2008)
103. **“Immunological risk factor determinants in cancer”**, at the 21st Round table conference on “Life Style and Cancer’ at New Delhi (November 2008)
104. **“Flow Cytometric methods for Red cell dysfunction”** at the 8th Indo-US Cytometry Workshop on clinical applications of flow cytometry at SGPGIMS, Lucknow, India (December 2007)
105. **“Minimal residual disease in leukemia”** at 2nd National CME cum workshop in Hemato-oncopathology at New Delhi, India (October, 2002)

C. Courses/CME/Workshops Organized:

1. Organized 15th TCS Annual conference & Workshops from October 26 – October 29, 2023 with thematic focus on “Flow Cytometry: From Basics to Multi-Omics” at AIIMS, New Delhi
2. Organized SegPC 2021 challenge from November 2020 to April 2021 (<https://segpc2021.grand-challenge.org/>) with IIITD as part of IEEE ISBI 2021 conference, France. The task was cell image segmentation from microscopic images of MM blood cancer dataset. The dataset is available publicly at IEEE dataport and Kaggle.
3. Organized a Cancer imaging challenge at IEEE ISBI 2019 in Venice, Italy along with IIITD on "C-NMC challenge: Classification of Normal vs Malignant Cells in B-ALL White Blood Cancer Microscopic Image" as part of the IEEE International Symposium on Biomedical Imaging (IEEE-ISBI, 2019) conference held in Venice, Italy from April 8-11, 2019. The challenge was technically co-sponsored by IBM India Pvt. Ltd. IBM also distributed prizes to the top three teams.
4. Organized “11th TCS Annual Meeting on October 29 – October 30, 2018 with two days Workshops on ‘Flow Cytometry: Multi-Dimensional & Multi-Faceted’ on October 31 – November 1, 2018
5. Organized “Molecular Neuro-Oncology Workshop on Sequencing” as part of 10th annual conference of Indian society of Neuro Oncology (5th- 6th April 2018).
6. Conducted two-day workshop on ‘Flow cytometry in Acute leukemia & Lymphoproliferative disorders’ at the 10th annual meeting of The Cytometry Society at Trivandrum (October 2017). Several National & International speakers of repute were faculty of this academic endeavor.
7. Organized ‘CME Series in Hemato-oncopathology’ at AIIMS on July 23-24, 2016. Several National & International speakers of repute were faculty of this academic endeavor.
8. Have been Organizing Advanced TCS flow cytometry workshops on hematological malignancies at Delhi-NCR for past seven years on yearly basis. Through this course, many medical professionals including faculty members from various medical colleges have been trained

9. Organized '1st Indo-US Joint Conference on Translational Research in Cancer' at AIIMS, New Delhi in March 2016
10. Organized DBT, India-NCI, USA-AIIMS Provocative Question Workshop on 'Importance of International Collaboration in Medical Research' in October 2014
11. Imparting hands-on-training to the participants of the TCS flow cytometry workshops & Indo-US flow cytometry workshops
12. Active participation in the formulation of "National guidelines for immunophenotyping of hematolymphoid malignancies"

D. Other Educational Activities

Developed curriculum based interactive content along with video recording for the lectures under "Medical & Health Sciences" category for PG Pathshala website, an initiative of MHRD-UGC. The modules included: Basics of Flow Cytometry; Application of flow cytometry in medical sciences

Research Contributions

Summary of Research Contributions: Enclosed on next page

Funded Research Projects as Principal Investigator: 25

- **Unit of Excellence Research Grant on Multiple Myeloma: 01**
- **Centre for Advanced Research and Excellence (Care) on AML: 01**

International Research Challenges Organized: 02

Research Datasets Released for scientific community: 08

Open-source Staging systems for Multiple myeloma: 02

Summary of the Research Contributions

I have contributed to the understanding of the pathogenesis, clonal evolution, immune microenvironment, biomarker discovery and risk prediction models in hematological malignancies, especially Multiple Myeloma (MM) and Chronic Lymphocytic Leukemia (CLL). My laboratory reported a progressive increase in the mutations' burden especially in the 3' and 5'UTRs and cancer related signalling pathways as MM progresses from its precursor Monoclonal Gammopathy of Undetermined Significance. This work demonstrates the role of dysregulated cancer pathways and regulatory binding sites in pathogenesis of MM (*Am J Cancer Res 2022 & 2021; IF=6.166*). My research group demonstrated that MM progresses predominantly through branching pattern of clonal evolution with temporal changes in mutations in the driver and actionable genes (*Am J Cancer Res 2020; IF=6.166*). Further, intraclonal heterogeneity in myeloma genome and a significant correlation between co-occurring oncogenic mutations that synchronize molecular events of drug response and myelomatogenesis were demonstrated (*Transl Oncol 2020; IF=4.803*). The above concepts highlight the clinical relevance of evaluation of subclonal mutational landscapes for tailoring time and risk-adapted therapy in MM.

My lab reported for the first time the clinical significance of chromothripsis in MM and established it as an independent prognostic biomarker. (*Leuk Res 2018*). During this process, my team also developed an integrated approach using MLPA with q-PCR to decipher high-risk cytogenetic aberrations (HRCA) and thus, a nucleic acid-based risk staging system was validated for clinical use (*Ann Hematol 2018*).

My research group identified the functionally connected hub genes and transcription factor regulatory networks in MM. This work identified miR-16-2-3p and 30d-2-3p as the two most prognostically relevant miRs that correlated with survival outcomes in MM. (*Sci Rep. 2021; IF=4.997; CI=15*).

My group reported functional potential of regulatory T-cells despite reduced expression levels of FoxP3 suggesting that the regulatory T-cells do not play a tumor-facilitatory role in MM. Besides, the regulatory T-cells showed an early and preferential recovery as compared to CD4+ cells after autologous stem cell transplantation. The increase in functionally competent regulatory T-cells in MM patients after anti-myeloma therapy points to a complex interaction

between the immune regulatory and recovery processes in MM (*Leuk Res* 2011; *CI=65*). Furthermore, the changes in circulating Endothelial Progenitor Cells and angiogenic cytokines commensurate with the depth of response was demonstrated, adding their value as clinical biomarkers (*Leuk Lymphoma* 2012; *Cytokine* 2020; *CI=27*).

Multiple myeloma is biologically heterogeneous, and the existing risk predictions models have been generated on western cohorts. My team evaluated the risk predictions in the context of ethnicity-specific information. In a systematic evaluation of 2000 patients of MM, we validated robust AI and deep learning-based risk-stratification models for Indian patients that outperformed the existing Revised international staging system. They include 1) Modified risk staging (MRS) when genomic data on HRCA is not available (*Transl Oncol* 2021), 2) Consensus based risk-stratification system (CRSS) with availability of genomic data with a SHapley Additive explanation to establish the biological relevance of the risk predictions (*Front Oncol* 2021; *IF=6.244*) and, 3) Graph Convolution Risk Staging (GCRS) which is a further improvement on the previous models (*Comp Biol Med* 2022; *IF=6.698*). These risk prediction calculators are available online. This work is a value addition as it establishes novel and robust risk-staging models that can be employed in India irrespective of the existing diversity and disparity of our health care infrastructure.

My team established the Next Generation Flow cytometry (NGF) assay for Measurable Residual Disease (MRD) and defined cut-offs for dynamic risk monitoring and, also introduced a novel statistic of neoplastic plasma cell index (NPCI) to overcome the caveat of hemodilution that mars the utility of NGF in clinical practice (*Am J Clin Pathol* 2023; *IF=5.4*). My group also described the pattern-based recognition for identification of neoplastic plasma cells (*Clinical Cytometry* 2022) and immunomodulation after chemotherapy that impacts residual disease assessment in MM (*Am J Clin Pathol* 2009; *CI=89*). This work has enhanced the disease monitoring in the clinical stem cell transplantation program at AIIMS, Delhi.

In collaboration with IIITD, we developed single cell image processing modules to deduce deep information from the cancer cells captured on glass slides in routine diagnostic procedures that can be used to develop an automated AI-solution for cancer cell classification (*Med Image Ana* 2020; *IF=13.828*; *CI=56*; *PloS one* 2018; *IF=3.75*; *CI=28*; *Med Image Ana* 2020; *IF=13.828*; *CI=42*; *Med Image Ana* 2021; *IF=13.828*; *CI=18*).

In recognition of the contributions in the field of multiple myeloma, I was invited to contribute to the chapters on plasma cell proliferative disorders in the latest 5th edition of WHO blue book on haematolymphoid disorders.

My laboratory profiled the epigenome and miRnome of Chronic lymphocytic leukemia (CLL) and identified prognostically relevant signatures. In the genome wide analysis, eight key differentially expressed miRs (miR-1295a, miR-155, miR-4524a, miR-30a, miR-423, miR-486*, let-7e, and miR-744) were identified and miR-4524a and miR-744 were validated for their prognostic impact on risk and time to first treatment (*Blood Cancer J, 2020; IF=11.037; CI: 22*). We integrated the global DNA methylation changes with gene expression profile and identified CRY1 and PAX9 genes that were associated with higher relative risk of treatment initiation, shorter time to first treatment and overall survival and thus could serve as potential biomarkers for early stage CLL (*Clin Epigen 2017; IF= 6.95; CI:24*).

Recently, my laboratory has dissected the single cell transcriptome profile of myeloid leukemic stem cells (LSCs) and reported tumour heterogeneity at single cell level and putative targets of therapeutic potential (*Ann Hematol 2023*). This work received Berend Houwen Award from the International Society of Laboratory Haematology in 2021 and 2022.

Research Grants as Principal Investigator

| S. No. | Title of the Project | Funding Agency | Duration From-To | Funds Sanctioned |
|--------|---|------------------|------------------|------------------|
| | Characterizing the functional role of DNA binding domain lacking novel alternative splice form of TET1 in acute myeloid leukemia, leukemic stem cells and can it be chemically targeted | ICMR | 2023-2026 | |
| 1 | To determine the incidence and prevalence of second primary malignancies (SPMs) both preceding or following CLL diagnosis and their impact on the disease course and overall survival (OS) | Harmony Alliance | 2023-2025 | 18,67,367 |
| 2 | To establish a Cryopreservation system for Multiple Myeloma (MM) cells. | FMER*, USA | 2023-2025 | 49,082 USD |
| 3 | Power Grant on Targeting the Tumor Microenvironment for novel therapeutic approaches in Multiple Myeloma (MM) | DST | 2022-2025 | 59,78,000 |
| 4 | Characterization of T cell activation and role of Follicular helper T cells in Multiple Myeloma | ICMR | 2022-2025 | 18,00,000 |
| 5 | Centre of Advanced Research & Excellence on Acute Myeloid Leukemia | ICMR | 2019-2024 | 5,00,00,000 |
| 6 | Immunoprofiling (IP) consortium for COVID-19: Integration of Extended Immune Monitoring (ExImM) and clinical parameters for early prediction of disease trajectory/progression, treatment planning and prophylaxis to improve COVID-19 prognosis. | ICMR | 2020-2022 | 72,06,000 |
| 7 | Identification of network pathways for drug targeting in Multiple Myeloma from NGS data using Deep Learning | DST | 2018-2021 | 13,41,000 |
| 8 | Minimal Residual Disease Estimation in Multiple Myeloma Using Image Processing | DST | 2018-2021 | 45,00,000 |
| 9 | Elucidation of circulating cell free miRNA in pathogenesis, disease progression and outcome in multiple myeloma using integrated bioinformatics and experimental approach | AIIMS | 2018-2020 | 20,00,000 |
| 10 | Unit of Excellence on Cancer Research on Multiple Myeloma | DBT | 2016-2022 | 3,14,00,000 |
| 11 | Elucidation of pathologically relevant miRNAs responsible for disease progression and resistance to chemotherapy in CLL | DBT | 2015-2018 | 1,05,00,000 |
| 12 | Interrogating the myeloma genome with reference to microRNAs modulated gene expression | DBT | 2014-2017 | 69,74,000 |
| 13 | Design and Development of Leukoanalyzer, an Automated Computer Assisted Tool, for Minimal Residual Disease Estimation (MRD) in B-Lineage Acute Lymphoblastic Leukemia (ALL) using Image Processing Techniques | DeitY | 2014-2017 | 46,67,000 |
| 14 | Resistance to tyrosine kinase inhibitors in Indian patients with chronic myeloid leukemia-a mechanistic view | ICMR | 2015-2018 | 21,24,000 |
| 15 | Development of laboratory algorithm for molecular classification of Multiple Myeloma in clinical practice | AIIMS | 2016-2017 | 10,00,000 |
| 16 | Prognostic Relevance of DNA methylation in chronic lymphocytic leukemia | DBT | 2011-2014 | 52,50,000 |
| 17 | Th17 cells in pathobiology of multiple myeloma | DST | 2012-2014 | 23,00,000 |
| 18 | Natural Killer & T-lymphocyte Subset Analysis in Multiple Myeloma | ICMR | 2011-2014 | Fellowship |
| 19 | Towards a comprehensive molecular score in CLL | AIIMS | 2011-2014 | 10,00,000 |
| 20 | Molecular & immunological basis of biological heterogeneity in CLL | DBT | 2008-2013 | 19,50,000 |
| 21 | HIF-1 α as regulator of angiogenesis in multiple myeloma | ICMR | 2010-2012 | Fellowship |

| | | | | |
|----|--|---------|-----------|-----------|
| 22 | Regulatory T-Cell repertoire in plasma cell myeloma | DBT | 2007-2010 | 14,80,000 |
| 23 | Immunophenotypic characterization of plasma cells by flow cytometry in health & disease with particular reference to plasma cell myeloma | DST | 2006-2009 | 9,00,000 |
| 24 | Assessment of multi-drug resistance pattern in acute myeloid leukemia and response to therapy | AIIMS | 2006-2009 | 2,00,000 |
| 25 | Detection of PNH defect in patients with aplastic anemia and MDS | SGPGIMS | 2004-2005 | 1,10,000 |

*Funds for Myeloma Education & Research (FMER), USA

International Research Challenges Organized

1. Conducted SegPC 2021 challenge from November 2020 to April 2021 (<https://segpc-2021.grand-challenge.org/>) as part of IEEE ISBI 2021 conference, France. The task was cell image segmentation from microscopic images of MM blood cancer dataset. The dataset is available publicly at IEEE dataport and Kaggle. The leaderboard is open <https://segpc-2021.grand-challenge.org/evaluation/final-test-phase/leaderboard/>
2. Conducted C-NMC 2019 challenge from November 2018 to April 2019 titled "C-NMC challenge: Classification of Normal vs Malignant Cells in B-ALL White Blood Cancer Microscopic Image" as part of the IEEE ISBI, 2019 conference held in Venice, Italy from April 8-11, 2019. The dataset is available publicly at the site of The Cancer Imaging Archive (TCIA), USA. The leaderboard is open-<https://competitions.codalab.org/competitions/20395#results>.

Datasets Released

1. Gupta R, Gupta A, Kaur G, Chaturvedi N, Rani L. miRNA profiling of CLL. <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE123436>
2. Gupta R, Mathur N, Rani L, Katiyar A, Kaur P, Kumar L, Sharma A. Gene expression signatures in multiple myeloma. <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE125361>
3. Gupta R, Mathur N, Rani L, Katiyar A, Kaur P, Kumar L, Sharma A. miRNA expression signatures in multiple myeloma. <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE125363>
4. Anubha Gupta and Ritu Gupta (2019). C-NMC 2019 Dataset: ALL Challenge dataset of ISBI 2019 [Dataset]. The Cancer Imaging Archive. <https://doi.org/10.7937/tcia.2019.dc64i46r>
5. Ritu Gupta and Anubha Gupta (2019). MiMM_SBI Lab Dataset: Microscopic Images of Multiple Myeloma [Dataset]. The Cancer Imaging Archive. <https://doi.org/10.7937/tcia.2019.pnn6aypl>
6. Anubha Gupta and Ritu Gupta (2019). SN-AM Dataset: White Blood Cancer Dataset of B-ALL and MM for Stain Normalization [Dataset]. The Cancer Imaging Archive. <https://doi.org/10.7937/tcia.2019.of2w8lxx>

7. Mathur N, Rani L, Gupta R, Gogia A, Dhanjal JK, Sunder D. Kumar L, Sharma A. Methylation Profiling of IGHV Unmutated vs mutated CLL. <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE81936>
8. Rani L, Mathur N, Gupta R, Gogia A, Dhanjal JK, Sunder D. Kumar L, Sharma A. Gene expression profiling of IGHV Unmutated vs mutated CLL. <https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE81935>

Open-source Staging systems for Multiple myeloma:

1. sbilab.iiitd.edu.in/pub_files/CRRScalculator_edit.html
2. sbilab.iiitd.edu.in/pub_files/MRScalculator_DecisionTree.html

Publications

Full length Journal Publications >200

Chapters in Books: 7

Books/Journals Edited: 3

Citations: 3075; h-index: 30;i-10 index: 96

Links to PubMed and Google scholar are as follows:

https://www.ncbi.nlm.nih.gov/myncbi/111_AcrcwpnQ7/bibliography/public

<https://scholar.google.co.in/citations?hl=en&user=ICUcieAAAAAJ>

List of Journal Publications

*Corresponding Author

1. Das N, **Gupta R***. Risk Stratification in multiple myeloma – A review and update. Ann Natl Acad Med Sci (India). 2024;60:120–30. doi: 10.25259/ANAMS-2023-1-7-(820)
2. Sarma, R, Gupta, N, Gupta, A, Kumar V, Mishra S, Bharati SJ, Garg R, **Gupta R**, Gupta SK, Deo SVS, Kumar R, Bhatnagar S. Effect of Opioid-Free General Anesthesia Versus Opioid-Based General Anesthesia on Postoperative Pain and Immune Response in Patients Undergoing Breast Cancer Surgery: A Randomized Controlled Trial. Indian J Surg Oncol (2024). <https://doi.org/10.1007/s13193-024-02012-x>
3. Kumar S, Sharma A, Bakhshi S, Pushpam D, Gogia A, Sahoo RK, Pramanik R, Kumar A, Pathak N, Thulkar S, Sharma MC, **Gupta R**, Mallick S, Raina V. Autologous Stem Cell Transplantation in Adult Hodgkin Lymphoma at a Tertiary Care Center in India: Analysis of Outcomes and Prognostic Factors. Indian J Hematol Blood Transfus. 2024;40(2):181-189. doi: 10.1007/s12288-023-01690-x. PMID: 38708163
4. Sagar D, Dwivedi T, Gupta A, Aggarwal P, Bhatnagar S, Mohan A, Kaur P, **Gupta R**. Clinical Features Predicting COVID-19 Severity Risk at the Time of Hospitalization. Cureus 2024; 16(3): e57336. doi:10.7759/cureus.57336
5. Ma J, Xie R, Ayyadhury S, Ge C, Gupta A, **Gupta R**, Gu S, Zhang Y, Lee G, Kim J, Lou W, Li H, Upschulte E, Dickscheid T, de Almeida JG, Wang Y, Han L, Yang X, Labagnara M, Gligorovski V, Scheder M, Rahi SJ, Kempster C, Pollitt A, Espinosa L, Mignot T, Middeke JM, Eckardt JN, Li W, Li Z, Cai X, Bai B, Greenwald NF, Van Valen D, Weisbart E, Cimini BA, Cheung T, Brück O, Bader GD, Wang B. The multimodality cell segmentation challenge: toward universal solutions. Nat Methods. 2024;21(6):1103-1113. doi: 10.1038/s41592-024-02233-6. PMID: 38532015.

6. Das N, Panda D, Gajendra S, **Gupta R***, Thakral D, Kaur G, Khan A, Singh VK, Vemprala A, Bakhshi S, Seth R, Sahoo RK, Sharma A, Rai S, Prajapati VK, Singh S. Immunophenotypic characterization of leukemic stem cells in acute myeloid leukemia using single tube 10-colour panel by multiparametric flow cytometry: Deciphering the spectrum, complexity and immunophenotypic heterogeneity. *Int J Lab Hematol*. 2024. doi: 10.1111/ijlh.14250. PMID: 38456256.
7. **Gupta R***, Jevremovic D, Mathew SJ, Kumar S. Multiparametric Flow Cytometry in the Evaluation of Plasma Cell Proliferative Disorders: Current Paradigms for Clinical Practice. *Clin Lymphoma Myeloma Leuk*. 2024;24(3):e88-e95. doi: 10.1016/j.clml.2023.11.006. PMID: 38142203.
8. Pramanik R, Chitikela S, Deo SVS, Gogia A, Batra A, Kumar A, **Gupta R**, Thakral D, Ramprasad VL, Mathur S, Sharma DN, Sharma A, Mishra A, Bansal B. Comprehensive germline profiling of patients with breast cancer: initial experience from a Familial Cancer Clinic. *Ecancermedicalsecience*. 2024;18:1670. doi: 10.3332/ecancer.2024.1670. PMID: 38439815; PMCID: PMC10911669.
9. Ghati N, Bhatnagar S, Mahendran M, Thakur A, Prasad K, Kumar D, Dwivedi T, Mani K, Tiwari P, **Gupta R**, Mohan A. Investigating the Role of Palliative Care Education in Improving the Life Quality of Women with Breast Cancer. *Clinical Cancer Investigation Journal*. 2024;13(1-2024):46-50.
10. Gomathy SB, Kakkar A, **Gupta R**, Elavarasi A. Myeloblastic meningeal neoplasm: an unusual natural history. *BMJ Case Rep*. 2024;17(1):e256821. doi: 10.1136/bcr-2023-256821. PMID: 38191225.
11. Das N, Gajendra S, **Gupta R***. Analytical Appraisal of Hematogones in B-ALL MRD Assessment Using Multidimensional Dot-Plots by Multiparametric Flow Cytometry: A Critical Review and Update. *Indian J Hematol Blood Transfus*. 2024;40(1):12-24. doi: 10.1007/s12288-023-01696-5. PMID: 38312180; PMCID: PMC10830989.
12. Vemprala A, Gajendra S, **Gupta R***, Thakral D, Bakhshi S, Sahoo RK, Seth R, Upadhyay AD. Clinico-Hematological Profile of Acute Myeloid Leukemia: Experience from a Tertiary Care Cancer Center in North India. *Cureus*. 2023;15(12):e50869. doi: 10.7759/cureus.50869. PMID: 38249207; PMCID: PMC10799219.
13. Kumar N, Tandon A, Rana R, Rana DS, Bhalla AK, Gupta A, Sachdeva MP, Huirem RS, Chauhan K, Yashavarddhan MH, Basnal A, **Gupta R**, Mallick PK, Ganguly NK. Donor-Derived Cell-Free DNA as a Non-Invasive Biomarker for Graft Rejection in Kidney Transplant Recipients: A Prospective Study among the Indian Population. *Diagnostics (Basel)*. 2023 Nov 27;13(23):3540. doi: 10.3390/diagnostics13233540. PMID: 38066781; PMCID: PMC10706139.
14. Dwivedi, T., Raj, A., Das N, **Gupta R***, Bhatnagar S, Mohan A, Guleria R Persistence of SARS-CoV-2 Antibodies for a Year Following SARS-CoV-2 Vaccinations (BBV152 and ChAdOx1 nCoV-19). *Ind J Clin Biochem* (2023). <https://doi.org/10.1007/s12291-023-01149-w>
15. Chatzikonstantinou T, Scarfò L, Karakatsoulis G, Minga E, Chamou D, Iacoboni G, -----, **Gupta R**, et al.. Other malignancies in the history of CLL: an international multicenter study

- conducted by ERIC, the European Research Initiative on CLL, in HARMONY. *EClinicalMedicine*. 2023;65:102307. doi: 10.1016/j.eclinm.2023.102307. PMID: 38033506; PMCID: PMC10685149.
16. Leons GK, Sharma P, Gupta SK, **Gupta R**, Rani L, Gajendra S, Roy A, Sahoo RK. Detection of a novel SNX2 gene breakpoint in the SNX2::ABL1 fusion transcript in Ph-like B-cell acute lymphoblastic leukemia. *Pediatr Blood Cancer*. 2023;70(10):e30546. doi: 10.1002/pbc.30546. PMID: 37414723.
17. Mookerjee A, **Gupta R**, Kumar R, Sharma A, Pandey RM, Kumar L. Dual assessment with multiparameter flow cytometry and ¹⁸F-FDG PET/CT scan provides enhanced prediction of measurable residual disease after autologous haemopoietic stem cell transplant in myeloma-a prospective study. *Bone Marrow Transplant*. 2023 Sep;58(9):1045-1047. doi: 10.1038/s41409-023-02017-0. Epub 2023 Jun 16. PMID: 37328681.
18. Dwivedi T, Raj A, Das N, **Gupta R***, Gupta N, Tiwari P, Sahoo B, Sagiraju HKR, Sirohiya P, Ratre B, Elavarasi A, Mohan A, Bhatnagar S. The Evaluation of Laboratory Parameters as Predictors of Disease Severity and Mortality in COVID-19 Patients: A Retrospective Study From a Tertiary Care Hospital in India. *Cureus*. 2023 Jun 11;15(6):e40273. doi: 10.7759/cureus.40273. PMID: 37448393; PMCID: PMC10336329.
19. Singh UB, Deb S, Rani L, **Gupta R**, Verma S, Kumari L, Bhardwaj D, Bala K, Ahmed J, Gaurav S, Perumalla S, Nizam M, Mishra A, Stephenraj J, Shukla J, Nayer J, Aggarwal P, Kabra M, Ahuja V, Chaudhry R, Sinha S, Guleria R. Phylogeny and evolution of SARS-CoV-2 during Delta and Omicron variant waves in India. *J Biomol Struct Dyn*. 2023 Jun 15:1-13. doi: 10.1080/07391102.2023.2222832. Epub ahead of print. PMID: 37318006.
20. Batra G, Murugesan DR, Raghavan S, Chattopadhyay S, Mehdi F, Ayushi, Gosain M, Singh S, Das SJ, Deshpande S, Sonar S, Jakhar K, Bhattacharya J, Mani S, Pandey AK, Sankalp, Goswami S, Das A, Dwivedi T, Sharma N, Kumar S, Sharma P, Kapoor S, Kshetrappa P, Wadhwa N, Thiruvengadam R, Kumar R, **Gupta R**, Garg PK, Bhatnagar S. Trends of humoral immune responses to heterologous antigenic exposure due to vaccination & omicron SARS-CoV-2 infection: Implications for boosting. *Indian J Med Res*. 2023 Jun;157(6):509-518. doi: 10.4103/ijmr.ijmr_2521_22. PMID: 37322634; PMCID: PMC10466496.
21. Khare A, Singh AR, Datta SK, Singh S, Gupta A, Satpathy S, Sharma DK, **Gupta R**. Impact of Life Cycle Costing in Procurement of Robotic Track-Based Central Laboratory at Apex Medical Institute in India. *J Lab Physicians*. 2023 May 12;15(4):539-544. doi: 10.1055/s-0043-1768634. PMID: 37780868; PMCID: PMC10539050.
22. Das N, **Gupta R***. Voyage of Measurable Residual Disease Assessment in Multiple Myeloma Using Multiparametric Flow Cytometry. *Indian J Med Paediatr Oncol* 2023; 44(05): 515-524. doi: 10.1055/s-0043-1768176
23. Gajendra S, Anupurba S, **Gupta R***, Mallick S, Panda D, Thakral D, Gupta SK, Bakhshi S, Seth R, Rai S, Prajapati VK, Singh S. Acute myeloid leukemia with RAM immunophenotype: A new underdiagnosed entity. *Int J Lab Hematol*. 2023 Aug;45(4):541-552. doi: 10.1111/ijlh.14076. Epub 2023 Apr 20. PMID: 37078511.

24. Chaddha M, Rai H, **Gupta R***, Thakral D. Integrated analysis of circulating cell free nucleic acids for cancer genotyping and immune phenotyping of tumor microenvironment. *Front Genet.* 2023 Apr 6; 14:1138625. doi: 10.3389/fgene.2023.1138625. PMID: 37091783; PMCID: PMC10117686.
25. Rai S, Das N, **Gupta R***, Kumar L, Sharma A, Singh S, Prajapati VK. Utility of CD229 as novel marker in measurable residual disease assessment in multiple myeloma-An evidence-based approach. *Int J Lab Hematol.* 2023 Apr;45(2):179-186. doi: 10.1111/ijlh.13992. PMID: 36403963.
26. Chopra P, Sehgal T, Yadav R, Meena S, Maitra S, Soni KD, Subramanian A, Prakash S, Mathur P, Mittan S, Tavalacci S, Kaushik A, Gulia K, Mostafavi E, Gupta A, Trikha A, **Gupta R**, Chosdol K, Mohan A, Mani K, Sinha S, Datta SK. A Combination of Inflammatory and Hematological Markers is Strongly Associated with the Risk of Death in Both Mild and Severe Initial Disease in Unvaccinated Individuals with COVID-19 Infection. *EJIFCC.* 2023 Apr 18;34(1):42-56. PMID: 37124653; PMCID: PMC10131235.
27. Singh UB, Deb S, Rani L, Bhardwaj D, **Gupta R**, Kabra M, Bala K, Kumari L, Perumalla S, Shukla J, Nayer J, Aggarwal P, Ahuja V, Chaudhry R, Sinha S, Guleria R. Genomic surveillance of SARS-CoV-2 upsurge in India due to omicron sub-lineages BA.2.74, BA.2.75 and BA.2.76. *Lancet Reg Health Southeast Asia.* 2023 Jan 11:100148. doi: 10.1016/j.lansea.2023.100148. PMID: 36643851; PMCID: PMC9832050.
28. Gajendra S, **Gupta R***, Thakral D, Gupta SK, Jain G, Bakhshi S, Sharma A, Sahoo RK, Kumar L, Rai S, Singh S, Upadhyay AD. CD34 negative HLA-DR negative acute myeloid leukaemia: A higher association with NPM1 and FLT3-ITD mutations. *Int J Lab Hematol.* 2023; 45(2): 221-228. doi: 10.1111/ijlh.14007. PMID: 36504282.
29. Kante B, Vuyyuru SK, **Gupta R**, Dwivedi T, Kumar P, Mundhra S, Golla R, Virmani S, Verma M, Makharia G, Ahuja V, Kedia S. High seroprevalence against SARS-CoV-2 in non-vaccinated patients with inflammatory bowel disease from Northern India. *Indian J Gastroenterol.* 2023 Feb;42(1):70-78. doi: 10.1007/s12664-022-01310-y. Epub 2023 Feb 4. PMID: 36738383; PMCID: PMC9898695.
30. Mansouri L, Thorvaldsdottir B, Sutton LA, Karakatsoulis G, Meggendorfer M, Parker H, Nadeu F, Brieghel C, Laidou S, Moia R, Rossi D, Catherwood M, Kotaskova J, Delgado J, Rodríguez-Vicente AE, Benito R, Rigolin GM, Bonfiglio S, Scarfo L, Mattsson M, Davis Z, Gogia A, Rani L, Baliakas P, Foroughi-Asl H, Jylhä C, Skaftason A, Rapado I, Miras F, Martinez-Lopez J, de la Serna J, Rivas JMH, Thornton P, Larráyo MJ, Calasanz MJ, Fésüs V, Mátrai Z, Bödör C, Smedby KE, Espinet B, Puiggros A, **Gupta R**, Bullinger L, Bosch F, Tazón-Vega B, Baran-Marszak F, Oscier D, N'Guyen-Khac F, Zenz T, Terol MJ, Cuneo A, Hernández-Sánchez M, Pospisilova S, Mills K, Gaidano G, Niemann CU, Campo E, Strefford JC, Ghia P, Stamatopoulos K, Rosenquist R. Different prognostic impact of recurrent gene mutations in chronic lymphocytic leukemia depending on IGHV gene somatic hypermutation status: a study by ERIC in HARMONY. *Leukemia.* 2023;37(2):339-347. doi: 10.1038/s41375-022-01802-y. PMID: 36566271; PMCID: PMC9898037.

31. Kumar L, Sahoo RK, Kumar S, Baa AK, Tansir G, Pathak N, Malik PS, Sharma OD, Mathew A, Jha A, **Gupta R**, Sharma A, Biswas A, Kumar R, Thulkar S, Malik S, Dutt A; for AIIMS Myeloma Group. Autologous stem cell transplant for multiple myeloma: Impact of melphalan dose on the transplant outcome. *Leuk Lymphoma*. 2023 Feb;64(2):378-387. doi: 10.1080/10428194.2022.2148214. PMID: 36416679.
32. Ruhela V, Jena L, Kaur G, **Gupta R***, Gupta A. BDL-SP: A Bio-inspired DL model for the identification of altered Signaling Pathways in Multiple Myeloma using WES data. *Am J Cancer Res*. 2023 Apr 15;13(4):1155-1187. PMID: 37168334; PMCID: PMC10164815.
33. Thakral D, Singh VK, **Gupta R***, Jha N, Khan A, Kaur G, Rai S, Kumar V, Supriya M, Bakhshi S, Seth R. Integrated single-cell transcriptome analysis of CD34 + enriched leukemic stem cells revealed intra- and inter-patient transcriptional heterogeneity in pediatric acute myeloid leukemia. *Ann Hematol*. 2023;102(1):73-87. doi: 10.1007/s00277-022-05021-4. PMID: 36527458.
34. Gupta A, Gehlot S, Goswami S, Motwani S, **Gupta R**, Faura ÁG, Štepec D, Martinčič T, Azad R, Merhof D, Bozorgpour A, Azad B, Sulaiman A, Pandey D, Gupta P, Bhattacharya S, Sinha A, Agarwal R, Qiu X, Zhang Y, Fan M, Park Y, Lee D, Park JS, Lee K, Ye J. SegPC-2021: A challenge & dataset on segmentation of Multiple Myeloma plasma cells from microscopic images. *Med Image Anal*. 2023; 83:102677. doi: 10.1016/j.media.2022.102677. PMID: 36403309.
35. Das N, Dahiya M, **Gupta R***, Kumar L, Rani L, Gupta A, Fariswan A, Sharma A, Sharma OD. Graded Depth of Response and Neoplastic Plasma Cell Index as Indicators of Survival Outcomes in Patients With Multiple Myeloma Following Autologous Stem Cell Transplant. *Am J Clin Pathol*. 2023 Jan 4;159(1):69-80. doi: 10.1093/ajcp/aqac129. PMID: 36317501.
36. Gogia A, **Gupta R**, Sharma A, Kumar L, Rani L, Mallick S. Safety and Efficacy of Bendamustine and Rituximab (BR) Regimen in Indian Chronic Lymphocytic Leukaemia Patients. *Indian J Hematol Blood Transfus*. 2023;39(1):33-39. doi: 10.1007/s12288-022-01544-y. PMID: 36699426; PMCID: PMC9868021.
37. Sharma P, Gupta SK, Leons GK, Bakhshi S, **Gupta R**, Rani L, Gajendra S, Roy A, Pushpam D. IKZF1::CIITA, a novel fusion transcript in a case of relapsed B-cell acute lymphoblastic leukemia. *Pediatr Blood Cancer*. 2023;70(1): e29872. doi: 10.1002/pbc.29872. PMID: 35815811.
38. Meena JP, Makkar H, Gupta AK, Bakhshi S, **Gupta R**, Thakral D, Chopra A, Tanwar P, Upadhyay AD, Pathak N, Seth R. A comprehensive analysis of cytogenetics, molecular profile, and survival among pediatric acute myeloid leukemia: a prospective study from a tertiary referral center. *Am J Blood Res*. 2022;12(6):177-189. PMID: 36742278; PMCID: PMC9890188.
39. Sagiraju HKR, Elavarasi A, Gupta N, Garg RK, Paul SS, Vig S, Sirohiya P, Ratre B, Garg R, Pandit A, Singh R, Kumar B, Meena VP, Wig N, Mittal S, Pahuja S, Madan K, Das N, Dwivedi T, **Gupta R**, Wundavalli L, Singh AR, Singh S, Mishra A, Pandey M, Matharoo KS, Kumar S, Mohan A, Guleria R, Bhatnagar S. The Effectiveness of SARS-CoV-2 Vaccination in Preventing Severe Illness and Death – Real-world Data from a Cohort of Patients Hospitalized with COVID-19. *Indian J Community Med*. 2022;47(4):510-516. doi: 10.4103/ijcm.ijcm_1388_21. PubMed PMID: 36742977; PMCID: PMC9891054.

40. Panda D, Das N, Thakral D, **Gupta R***. Genomic landscape of mature B-cell non-Hodgkin lymphomas - An appraisal from lymphomagenesis to drug resistance. *J Egypt Natl Canc Inst.* 2022;34(1):52. doi: 10.1186/s43046-022-00154-z. PMID: 36504392.
41. Ramachandran SS, Gupta P, Kumar L, **Gupta R**, Goel L, Kumar VL, Gupta YK. Evaluation of serum glucose-regulated protein 78 (GRP78) as a biomarker of treatment response to bortezomib-based induction regimen in multiple myeloma: A cross-sectional pilot study. *Neoplasma.* 2022;69(6):1451-1458. doi: 10.4149/neo_2022_220526N564. PMID: 36591800.
42. Meena JP, Pathak N, Gupta AK, Bakhshi S, **Gupta R**, Makkar H, Seth R. Molecular evaluation of gene mutation profiles and copy number variations in pediatric acute myeloid leukemia. *Leuk Res.* 2022; 122:106954. doi: 10.1016/j.leukres.2022.106954. PMID: 36162216.
43. Sagar D, Aggarwal P, Farswan A, **Gupta R***, Gupta A. GCRS: A hybrid graph convolutional network for risk stratification in multiple myeloma cancer patients. *Comput Biol Med.* 2022; 149:106048. doi: 10.1016/j.compbiomed.2022.106048. PMID: 36113255.
44. Jain G, Das N, Gajendra S, Gangwar SP, **Gupta R***, Mallik S, Sharma A, Kumar L, Upadhyay AD. Effect of the sequence of pull of bone marrow aspirates on plasma cell quantification in plasma cell proliferative disorders. *Int J Lab Hematol.* 2022;44(5):837-845. doi: 10.1111/ijlh.13887. PMID: 36106595.
45. Gupta SK, Singh M, Chandrashekar PH, Bakhshi S, Trehan A, **Gupta R**, Thakur R, Gajendra S, Sharma P, Sreedharanunni S, Sachdeva MS, Pushpam D, Varma N, Bansal D, Jain R, Peyam S, Moorman AV, Bhatia P. Clinical and Prognostic Impact of Copy Number Alterations and Associated Risk Profiles in a Cohort of Pediatric B-cell Precursor Acute Lymphoblastic Leukemia Cases Treated Under ICiCle Protocol. *Hemasphere.* 2022 Sep 30;6(10):e782. doi: 10.1097/HS9.0000000000000782. PMID: 36204689
46. Kumar L, Hussain MM, Chethan R, Sahoo RK, Malik PS, Sharma OD, Mathew A, Jha A, **Gupta R**, Sharma A, Biswas A, Kumar R, Thulkar S, Malik S, Dutt A; for AIIMS Myeloma Group. Multiple Myeloma: Impact of Time to Transplant on the Outcome. *Clin Lymphoma Myeloma Leuk.* 2022 Apr 25: S2152-2650(22)00135-5. doi: 10.1016/j.clml.2022.04.020. PMID: 35599086.
47. Khan A, Singh VK, Thakral D, **Gupta R***. Autophagy in acute myeloid leukemia: a paradoxical role in chemoresistance. *Clin Transl Oncol.* 2022 Feb 26. doi: 10.1007/s12094-022-02804-z. Epub ahead of print. PMID: 35218522.
48. Ghati N, Bhatnagar S, Mahendran M, Thakur A, Prasad K, Kumar D, Dwivedi T, Mani K, Tiwari P, **Gupta R**, Mohan A, Saxena A, Guleria R, Deepti S. Statin and aspirin as adjuvant therapy in hospitalised patients with SARS-CoV-2 infection: a randomised clinical trial (RESIST trial). *BMC Infect Dis.* 2022 Jul 9;22(1):606. doi: 10.1186/s12879-022-07570-5. PMID: 35810307.
49. Ruhela V, Gupta A, Sriram K, Ahuja G, Kaur G, **Gupta R***. miRPipe: A Unified Computational Framework for a Robust, Reliable, and Reproducible Identification of Novel miRNAs from the RNA Sequencing Data. *Front Bioinform.* 2022;2:842051. doi: 10.3389/fbinf.2022.842051. PMID: 36304305; PMCID: PMC9580950.
50. Das N, Dahiya M, **Gupta R***, Rai S, Singh S, Prajapati VK, Kumar L, Sharma A, Sahoo RK, Gogia A. Flow cytometric immunophenotyping of plasma cells across the spectrum of

- plasma cell proliferative disorders: A fresh insight with pattern-based recognition. *Cytometry B Clin Cytom.* 2022 Feb 25. doi: 10.1002/cyto.b.22062. PMID: 35212134.
51. Kumar S, Sharma A, Malik PS, Gogia A, Pathak N, Sahoo RK, **Gupta R**, Prasad CP, Kumar L. Bendamustine in combination with pomalidomide and dexamethasone in relapsed/refractory multiple myeloma: A phase II trial. *Br J Haematol.* 2022 May 2. doi: 10.1111/bjh.18200. PMID: 35499209.
 52. Kaur G, Jena L, **Gupta R***, Farswan A, Gupta A, Sriram K. Correlation of changes in subclonal architecture with progression in the MMRF CoMMpass study. *Transl Oncol.* 2022 Jun 28; 23:101472. doi: 10.1016/j.tranon.2022.101472. PMID: 35777247.
 53. Budhraj A, Basu A, Gheware A, Abhilash D, Rajagopala S, Pakala S, Sumit M, Ray A, Arulselvi S, Mathur P, Nambirajan A, Kumar S, **Gupta R**, Wig N, Trikha A, Guleria R, Sarkar C, Gupta I, Jain D. Molecular signature of postmortem lung tissue from COVID-19 patients suggests distinct trajectories driving mortality. *Dis Model Mech.* 2022 Apr 19: dmm.049572. doi: 10.1242/dmm.049572. Epub ahead of print. PMID: 35438176.
 54. Thakral D*, **Gupta R***, Khan A. Leukemic Stem Cell signatures in Acute Myeloid Leukemia- Targeting the Guardians with Novel approaches. *Stem Cell Reviews & Reports* 2022. doi: 10.1007/s12015-022-10349-5. PMID: 35412219.
 55. **Gupta R***, Gehlot S, Gupta A*. C-NMC: B-Lineage Acute Lymphoblastic Leukemia: A Blood Cancer Dataset. *Med Eng Phys.* 2022 May; 103:103793. doi: 10.1016/j.medengphy.2022.103793. PMID: 35500994.
 56. Sirohiya P, Elavarasi A, Sagiraju HKR, Baruah M, Gupta N, Garg RK, Paul SS, Ratre BK, Singh R, Kumar B, Vig S, Pandit A, Kumar A, Garg R, Meena VP, Mittal S, Pahuja S, Das N, Dwivedi T, **Gupta R**, Kumar S, Pandey M, Mishra A, Matharoo KS, Mohan A, Guleria R, Bhatnagar S. Silent Hypoxia in Coronavirus disease-2019: Is it more dangerous? -A retrospective cohort study. *Lung India.* 2022 May-Jun;39(3):247-253. doi: 10.4103/lungindia.lungindia_601_21. PMID: 35488682.
 57. Ghosh T, Dwivedi T, Agarwal H, Iyer H, Tiwari P, Mittal S, **Gupta R**, Bhatnagar S, Vig S, Mohan A. Impact of various hematological and biochemical parameters on mortality in coronavirus disease 2019 (COVID-19): A single-center study from North India. *Lung India* 2022; 39:230. doi: 10.4103/lungindia.lungindia_480_21. PMID: 35488679
 58. Das N, Dahiya M, **Gupta R***, Kumar L, Sharma A, Rai S, Singh S, Prajapati VK, Sahoo RK, Gogia A. Relevance of polyclonal plasma cells and post-therapy immunomodulation in MRD assessment in Multiple Myeloma. *Cytometry B Clin Cytom.* 2022 May;102(3):209-219. doi: 10.1002/cyto.b.22068. PMID: 35389550.
 59. Farswan A, Gupta A*, **Gupta R***. ARCANE-ROG: Algorithm for Reconstruction of Cancer Evolution from single-cell data using Robust Graph Learning. *J Biomed Inform.* 2022 Mar 22:104055. doi: 10.1016/j.jbi.2022.104055. PMID: 35337943.
 60. Kumar S, Sharma A, Pramanik R, Pathak N, Gogia A, Kumar A, Kayal S, Sharma V, Sahoo RK, Thulkar S, Sharma MC, **Gupta R**, Mallick S, Thomas M, Raina V. Long-Term Outcomes and Safety Trends of Autologous Stem-Cell Transplantation in Non-Hodgkin Lymphoma: A Report from a Tertiary Care Center in India. *JCO Glob Oncol.* 2022 May;8: e2100383. doi: 10.1200/GO.21.00383. PMID: 35561291.
 61. Farswan A, Gupta A*, Jena L, Kaur G, **Gupta R***. Characterizing the mutational landscape of MM and its precursor MGUS. *Am J Cancer Res* 2022;12(4):1919-1933. PMID: 35530275

62. Singh UB, Rophina M, Chaudhry R, Senthivel V, Bala K, Bhoyar RC, Jolly B, Jamshed N, Imran M, **Gupta R**, Aggarwal P, Divakar MK, Sinha S, Arvinden VR, Bajaj A, Shamnath A, Jain A; COVID CBNAAT CORE GROUP, Scaria V, Sivasubbu S, Guleria R. Variants of concern responsible for SARS-CoV-2 vaccine breakthrough infections from India. *J Med Virol*. 2022 Apr;94(4):1696-1700. doi: 10.1002/jmv.27461. PMID: 34786733; PMCID: PMC8662202.
63. Gupta AK, Ramachandran M, Gupta A, Meena JP, Dwivedi T, Bala K, Kanga U, Singh U, **Gupta R**, Seth R. Allogeneic hematopoietic stem cell transplant after COVID-19 infection and its effect on the antibody titers to SARS-CoV-2. *Pediatr Transplant*. 2022 Mar;26(2):e14175. doi: 10.1111/petr.14175. PMID: 34668616; PMCID: PMC8646413.
64. Bansal AK, Sharawat SK, Gupta R, Vishnubhatla S, Bakhshi S. Serial Evaluation of T cell Subsets in Paediatric Acute Myeloid Leukaemia- a Prospective Study. *Indian J Hematol Blood Transfus*. 2022 Jan;38(1):153-157. doi: 10.1007/s12288-021-01436-7. PMID: 35125722; PMCID: PMC8804101.
65. Elavarasi A, Raju Sagiraju HK, Garg RK, Ratre B, Sirohiya P, Gupta N, Garg R, Pandit A, Vig S, Singh R, Kumar B, Meena VP, Wig N, Mittal S, Pahuja S, Madan K, Guleria R, Mohan A, Dwivedi T, **Gupta R**, Vidyarthi AJ, Chaudhry R, Das A, Wundavalli L, Singh AR, Singh S, Kumar S, Pandey M, Mishra A, Matharoo KS, Bhatnagar S. Clinical features, demography, and predictors of outcomes of SARS-CoV-2 infection at a tertiary care hospital in India: A cohort study. *Lung India*. 2022;39(1):16-26. doi: 10.4103/lungindia.lungindia_493_21. PMID: 34975048.
66. Pramanik R, Upadhyaya A, Khurana S, Kumar L, Malik PS, Kumar S, Ray M, Deo SVS, **Gupta R**, Thakral D, Thulkar S, Ramprasad VL. Comprehensive germline genomic profiling of patients with ovarian cancer: a cross-sectional study. *Indian J Med Paediatr Oncol* 2022; 43(4): 361-368. DOI: 10.1055/s-0042-1746197
67. Nair SC, Gogia A, Arora S, Kumar L, Sharma A, Biswas A, **Gupta R**, Mallick S. Clinicopathologic features and outcomes of diffuse large B-cell lymphoma with extranodal involvement: A retrospective analysis. *Cancer Res Stat Treat* 2022; 5:67-74
68. Sharma A, Gogia A, **Gupta R**. Pleural effusion as an unusual presentation of chronic lymphocytic leukemia. *Cancer Res Stat Treat* 2022; 5:388-9. <https://www.crsonline.com/text.asp?2022/5/2/388/349394>
69. Tansir G, Gogia A, **Gupta R**. Hydroxyurea-induced hyperpigmentation. *Cancer Res Stat Treat* 2022; 5:385-6. <https://www.crsonline.com/text.asp?2022/5/2/385/349218>
70. Kirar S, Gogia A, **Gupta R**. ATRA-induced myositis. *Cancer Res Stat Treat* 2022; 5:386-8. <https://www.crsonline.com/text.asp?2022/5/2/386/349219>
71. Gogia A, Nair S, Arora S, Kumar L, Sharma A, **Gupta R**, Biswas A, Mallick S. Impact of cell-of-origin on outcome of patients with Diffuse Large B-cell Lymphoma treated with uniform R-CHOP protocol: A single-center retrospective analysis from North India. *Front Oncol*. 2021; 11:770747. doi: 10.3389/fonc.2021.770747
72. Farswan A, Jena L, Kaur G, Gupta A*, **Gupta R***, Rani L, Sharma A, Kumar L. Branching clonal evolution patterns predominate mutational landscape in Multiple Myeloma. *Am J Cancer Res* 2021; 11(11):5659-5679. PMID: 34873486; PMCID: PMC8640818
73. Farswan A, Gupta A*, Sriram K, Sharma A, Kumar L, **Gupta R***. Does ethnicity matter in multiple myeloma risk prediction in the era of genomics and novel agents? Evidence from real world data. *Front Oncol*. 2021; 11:720932. doi: 10.3389/fonc.2021.720932. PMID: 34858811; PMCID: PMC8630746.

74. Singh V, Thakral D, **Gupta R***. Regulatory Noncoding RNAs: Potential biomarkers and therapeutic targets in Acute myeloid leukemia. *Am J Blood Res* 2021; 11(5):504-519. PMID: 34824883; PMCID: PMC8610797.
75. Mohan A, Tiwari P, Suri TM, Mittal S, Patel A, Jain A, Velpandian T, Das US, Boppana TK, Pandey RM, Shelke SS, Singh AR, Bhatnagar S, Masih S, Mahajan S, Dwivedi T, Sahoo B, Pandit A, Bhopale S, Vig S, **Gupta R**, Madan K, Hadda V, Gupta N, Garg R, Meena VP, Guleria R. Single-dose oral ivermectin in mild and moderate COVID-19 (RIVET-COV): A single-centre randomized, placebo-controlled trial. *J Infect Chemother*. 2021 Dec;27(12):1743-1749. doi: 10.1016/j.jiac.2021.08.021. PMID: 34483029; PMCID: PMC8384587.
76. **Gupta R**, Dwivedi T, Gajendra S, Sahoo B, Gupta SK, Vikas H, Singh AR, Mohan A, Bhatnagar S, Singh S, Wundavalli L, Guleria R. Authors' response. *Indian J Med Res*. 2021 May;153(5&6):565-567. doi: 10.4103/0971-5916.323967. PMID: 34643565; PMCID: PMC8555615.
77. Gupta SK, Bakhshi S, Kamal VK, **Gupta R**, Sharma P, Pushpam D, Sahoo RK, Sharma A. Proposal and clinical application of molecular genetic risk scoring system, "MRplus", for BCR-ABL1 negative pediatric B-cell acute lymphoblastic leukemia- report from a single centre. *Leuk Res*. 2021; 111:106683. doi: 10.1016/j.leukres.2021.106683. PMID: 34371436.
78. Farswan A, Gupta A, **Gupta R***, Hazra S, Khan S, Kumar L, Sharma A. AI-supported modified risk staging for multiple myeloma cancer useful in real-world scenario. *Transl Oncol*. 2021;14(9):101157. doi: 10.1016/j.tranon.2021.101157. PMID: 34247136; PMCID: PMC8278429.
79. Das N, **Gupta R***, Gupta SK, Bakhshi S, Seth R, Kumar C, Rai S, Singh S, Prajapati VK, Gogia A, Sahoo RK, Sharma A, Kumar L. Critical evaluation of the utility of pre- and post-therapy immunophenotypes in assessment of measurable residual disease in B-ALL. *Ann Hematol*. 2021. doi: 10.1007/s00277-021-04580-2. PMID: 34236495.
80. Garg S, Kumar A, **Gupta R***. Stance of MRD in Non-Hodgkin's Lymphoma and its upsurge in the novel era of cell-free DNA. *Clin Transl Oncol*. 2021;23(11):2206-2219. doi: 10.1007/s12094-021-02635-4. PMID: 33991328.
81. Katiyar A, Kaur G, Rani L, Jena L, Singh H, Kumar L, Sharma A, Kaur P*, **Gupta R***. Genome-wide identification of potential biomarkers in multiple myeloma using meta-analysis of mRNA and miRNA expression data. *Sci Rep*. 2021; 11(1):10957. doi: 10.1038/s41598-021-90424-y. PMID: 34040057; PMCID: PMC8154993.
82. Gehlot S, Gupta A*, **Gupta R***. A CNN-based unified framework utilizing projection loss in unison with label noise handling for multiple Myeloma cancer diagnosis. *Med Image Anal*. 2021; 72:102099. doi: 10.1016/j.media.2021.102099. PMID: 34098240.
83. Gupta AK, Ramachandran M, Meena JP, Dwivedi T, Singh U, **Gupta R**, Seth R. Robust and sustained antibody response to SARS-CoV-2 in a child pre and post autologous hematopoietic stem cell transplant. *Pediatr Blood Cancer*. 2021; 68(5):e28848. doi: 10.1002/pbc.28848. PMID: 33351985; PMCID: PMC7883199.
84. Gupta SK, Bakhshi S, **Gupta R**, Sharma P, Pushpam D, Sahoo RK, Kamal VK. IKZF1 Deletion Subtyping and Outcome Analysis in BCR-ABL1-Negative Pediatric B-Cell Acute Lymphoblastic Leukemia: A Single-Institution Experience from North India. *Clin Lymphoma Myeloma Leuk*. 2021:S2152-2650(21)00110-5. doi: 10.1016/j.clml.2021.03.007. PMID: 33906825.
85. **Gupta R**, Dwivedi T, Gajendra S, Sahoo B, Gupta SK, Vikas H, Singh AR, Mohan A, Bhatnagar S, Singh S, Wundavalli L, Guleria R. Seroprevalence of antibodies to SARS-CoV-2 in

- healthcare workers & implications of infection control practice in India. *Indian J Med Res* 2021;153:207-213. doi: 10.4103/ijmr.IJMR_3911_20. PMID: 33642348.
86. Kumar L, Gundu N, Kancharia H, Sahoo RK, Malik PS, Sharma A, **Gupta R**, Sharma O, Biswas A, Kumar R, Thulkar S, Mallick S; AIIMS Myeloma Group. Multiple Myeloma-Effect of Induction Therapy on Transplant Outcomes. *Clin Lymphoma Myeloma Leuk*. 2021;21(2):80-90. e5. doi: 10.1016/j.clml.2020.08.021. PMID: 33129746.
 87. Arora S, Pushpam D, Tiwari A, Choudhary P, Chopra A, **Gupta R**, Kumar R, Bakhshi S. Allogeneic hematopoietic stem cell transplant in pediatric acute myeloid leukemia: Lessons learnt from a tertiary care center in India. *Pediatr Transplant*. 2021; 25(3):e13918. doi: 10.1111/petr.13918. PMID: 33142026.
 88. Thakral D*, **Gupta R***, Sahoo RK, Verma P, Kumar I, Vashishtha S. Real-Time Molecular Monitoring in Acute Myeloid Leukemia with Circulating Tumor DNA. *Front Cell Dev Biol*. 2020; 8:604391. doi: 10.3389/fcell.2020.604391. PMID: 33363162
 89. Kumar A, **Gupta R**, Mathur N, Iyer V.K, Thulkar S., Prasad C.P, Das P, Rani L, Maqbool M, Shukla NK, Pal S, Sundar D, Sharma A. Microarray based gene expression profiling of advanced gall bladder cancer. *Experimental Oncology*. 2020; 42(4): 277-284. doi: 10.32471/exp-oncology.2312-8852.vol-42-no-4.15476
 90. Goswami C, Chawla S, Thakral D, Pant H, Verma P, Malik PS, Jayadeva, **Gupta R***, Ahuja G*, Sengupta D*. Molecular signature comprising 11 platelet-genes enables accurate blood-based diagnosis of NSCLC. *BMC Genomics*. 2020; 21(1):744. doi: 10.1186/s12864-020-07147-z. PMID: 33287695; PMCID: PMC7590669.
 91. Ghati N, Roy A, Bhatnagar S, Bhati S, Bhushan S, Mahendran M, Thakur A, Tiwari P, Dwivedi T, Mani K, **Gupta R**, Mohan A, Garg R, Saxena A, Guleria R, Deepti S. Atorvastatin and Aspirin as Adjuvant Therapy in Patients with SARS-CoV-2 Infection: A structured summary of a study protocol for a randomised controlled trial. *Trials*. 2020 Oct 30;21(1):902. doi: 10.1186/s13063-020-04840-y. PMID: 33126910; PMCID: PMC7598224.
 92. Kirar S, Gogia A, **Gupta R**, Mallick S. Ibrutinib Induced Skin Rash. *Turk J Haematol*. 2020 Oct 15. doi: 10.4274/tjh.galenos.2020.2020.0120. PMID: 33053966
 93. Mann M, Kumar L, Chauhan S, Bhatla N, Kumar S, Bakhshi S, **Gupta R**, Mathur S. Better therapeutic target to enhance cisplatin sensitivity in cervical cancer: PARP-1 or β -catenin. *J Cancer Sci Clin Ther* 2020; 4(3):266-282
 94. Kumar S, Gogia A, **Gupta R**, Mallick S. Chronic lymphocytic leukemia with Dermatomyositis: A therapeutic challenge. *Turk J Haematol*. 2020 Nov 19;37(4):291-292. doi: 10.4274/tjh.galenos.2020.2020.0331. Epub 2020 Aug 20. PMID: 32819077; PMCID: PMC7702654.
 95. Jasrotia S, **Gupta R**, Sharma A, Halder A, Kumar L. Cytokine profile in multiple myeloma. *Cytokine* 2020;136:155271. doi: 10.1016/j.cyto.2020.155271. PMID: 32916474
 96. Mohan A, Tiwari P, Bhatnagar S, Patel A, Maurya A, Dar L, Pahuja S, Garg R, Gupta N, Sahoo B, **Gupta R**, Meena VP, Vig S, Pandit A, Mittal S, Madan K, Hadda V, Dwivedi T, Choudhary A, Brijwal M, Soneja M, Guleria R, Ratre B, Kumar B, Bhopale S, Panda S, Singh AR, Singh S, Wundavalli L. Clinico-demographic profile & hospital outcomes of COVID-19 patients admitted at a tertiary care centre in north India. *Indian J Med Res*. 2020; 152:61-69. doi: 10.4103/ijmr.IJMR_1788_20. PMID: 32773414.
 97. Rai S, Singh S, **Gupta R**. Prognostic significance of CD56 and CD7 in Acute Myeloid Leukaemia and their outcome. *Am J Blood Res*. 2020;10(4):109-117. PMID: 32923090; PMCID: PMC7486483.

98. Jain G, Thakral D, Sahoo RK, Kumar I, Vashishtha S, Verma P, **Gupta R***. Next Generation Sequencing guided treatment modulation and prognosis in Acute Myeloid Leukemia: Case Vignettes. *Am J Blood Res.* 2020; 10(4): 134-144. PMID: 32923093; PMCID: PMC7486490.
99. Bansal AK, Sharawat SK, **Gupta R**, Vishnubhatla S, Dhawan D, Bakhshi S. Regulatory T cells in pediatric AML are associated with disease load and their serial assessment suggests role in leukemogenesis. *Am J Blood Res.* 2020; 10(4):90-96. PMID: 32923088; PMCID: PMC7486484.
100. Rai S, Singh S, **Gupta R**. Levels of expression of CD45 for normal lymphocytes in different leukemic cases by flowcytometry. *Indian J Pathol Microbiol* 2020;63(3):505-506. doi: 10.4103/IJPM.IJPM_188_19. PMID: 32769357
101. Thakral D, Das N, Basnal A, **Gupta R***. Cell-free DNA for genomic profiling and minimal residual disease monitoring in Myeloma- are we there yet? *Am J Blood Res.* 2020 Jun 15;10(3):26-45. PMID: 32685257; PMCID: PMC7364270.
102. Gupta A*, Duggal R, Gehlot S, **Gupta R***, Mangal A, Kumar L, Thakkar N, Satpathy D. GCTI-SN: Geometry-inspired chemical and tissue invariant stain normalization of microscopic medical images. *Med Image Anal.* 2020 Jul 21; 65:101788. doi:10.1016/j.media.2020.101788. PMID: 32745978
103. Das N, **Gupta R***, Gupta SK, Bakhshi S, Malhotra A, Rai S, Singh S, Prajapati VK, Sahoo RK, Gogia A, Sharma A, Kumar L. A real world-perspective of CD123 expression in acute leukemia as promising biomarker to predict treatment outcome in B-ALL and AML. *Clin Lymphoma Myeloma Leuk.* 2020; 20(10): e673-e684. doi: 10.1016/j.clml.2020.05.004. PMID: 32561191
104. Ganguly S, Pushpam D, Mian A, Chopra A, **Gupta R**, Bakhshi S. Real-world Experience of Imatinib in Pediatric Chronic Phase Chronic Myeloid Leukemia: A Single-center Experience from India. *Clin Lymphoma Myeloma Leuk.* 2020 Jul;20(7): e437-e444. doi: 10.1016/j.clml.2020.02.015. PMID: 32247650
105. Gehlot S, Gupta A*, **Gupta R***. SDCT-AuxNet θ : DCT augmented stain deconvolutional CNN with auxiliary classifier for cancer diagnosis. *Med Image Anal.* 2020; 61:101661. doi: 10.1016/j.media.2020.101661. PMID: 32066066
106. Kaur G, Ruhela V, Rani L, Gupta A, Sriram K, Gogia A, Sharma A, Kumar L, **Gupta R***. RNA-Seq profiling of deregulated miRs in CLL and their impact on clinical outcome. *Blood Cancer J.* 2020;10(1):6. doi: 10.1038/s41408-019-0272-y. (PMID:31932582)
107. Farswan A, Gupta A, **Gupta R***, Kaur G. Imputation of gene expression data in blood cancer and its significance in inferring biological pathways. *Front Oncol.* 2020; 9:1442. doi: 10.3389/fonc.2019.01442. PMID:31970084
108. Gogia A, Kumar L, Sharma A, **Gupta R**, Rani L. Outcome of chronic lymphocytic leukemia with deletion 17p. *Cancer Res Stat Treat* 2020;3:638-40
109. Garg A, Gogia A, Mallick S, **Gupta R**. B-Acute lymphoblastic leukemia in a follow-up case of breast cancer. *Ind J Med Paed Oncol* 2020; 41(1): 99-101
110. Thakral D, Kaur G, **Gupta R***, Benard-Slagter A, Savola S, Kumar I, Anand R, Rani L, Verma P, Joshi S, Kumar L, Sharma A, Bakhshi S, Seth R, Singh V. Rapid Identification of Key Copy Number Alterations in B- and T-Cell Acute Lymphoblastic Leukemia by Digital Multiplex Ligation-Dependent Probe Amplification. *Front Oncol.* 2019 Sep 13; 9:871. doi: 10.3389/fonc.2019.00871. (PMID: 31572674)

111. Mann M, Kumar S, Chauhan SS, Bhatla N, Kumar S, Bakhshi S, **Gupta R**, Sharma A, Kumar L. PARP-1 inhibitor modulate β -catenin signaling to enhance cisplatin sensitivity in cancer cervix. *Oncotarget* 2019;10(42):4262-4275. doi: 10.18632/oncotarget.27008. PMID: 31303961
112. Rani L, Gogia A, Singh V, Kumar L, Sharma A, Kaur G, **Gupta R***. Comparative assessment of prognostic models in Chronic Lymphocytic Leukemia: Evaluation in Indian Cohort. *Ann Hematol.* 2019; 98:437-443. doi: 10.1007/s00277-018-3525-0. PMID: 30338367
113. Kaur G, **Gupta R***, Mathur N, Rani L, Kumar L, Sharma A, Singh V, Gupta A, Sharma OD. Clinical impact of chromothriptic complex chromosomal rearrangements in newly diagnosed multiple myeloma. *Leuk Res.* 2019; 76:58-64. doi: 10.1016/j.leukres.2018.12.005. PMID: 30576858
114. Kumar L, Ramavath D, Kataria B, Tiwari A, Raj A, Chellapuram SK, Mookerjee A, Sahoo RK, Malik PS, Sharma A, **Gupta R**, Sharma OD, Biswas A, Kumar R, Thulkar S, for AIIMS Myeloma Group. High-dose chemotherapy followed by autologous stem cell transplant for multiple myeloma: Predictors of long-term outcome. *Ind J Med Res* 2019;14996):730-739. doi: 10.4103/ijmr.IJMR_1593_18. PMID: 31496525; PMCID: PMC6755776.
115. Das N, Thakral D, Singh G, Malhotra A, Phulware RH, Gogia A, **Gupta R***. FLI1 and MIC2 expression in precursor B-lymphoblastic leukemia with Burkitt-like morphology and extensive extramedullary involvement: A diagnostic challenge in pediatric small round cell tumor. *Indian J Pathol Microbiol* 2019; 62(4):614-617. (PMID: 31611454).
116. Kumar L, Chellapuram SK, Dev R, Varshneya A, Pawar S, Sharma A, Mookerjee A, sahu RK, Malik PS, Sharma A, **Gupta R**, Sharma OD, Biswas A, Kumar R, Thulkar S, Mallick S. Induction Therapy with Novel Agents and Autologous Stem Cell Transplant Overcomes the Adverse Impact of Renal Impairment in Multiple Myeloma. *Clinical Hematology International* 2019; 1(4): 205-219. doi.org/10.2991/chi.d.190805.003
117. Vanidassane I, Gogia A, Raina V, **Gupta R**. Treatment Related Acute Myeloid Leukemia in Breast Cancer Survivors: A Single Institutional Experience. *Indian J Hematol Blood Transfus* 2019 Jul;35(3):561-562. (PMID: 31388274)
118. Gogia A, **Gupta R**, Kumar L, Sharma A, Soni L. Chronic lymphocytic leukemia with deletion 17p: An Indian scenario. *South Asian J Cancer.* 2019; 8(1):40. (PMID: 30766851)
119. Mittal A, Gogia A, Mallick S, **Gupta R**. Leukemia Cutis: A Rare Initial Presentation of Chronic Lymphocytic Leukemia. *Indian J Hematol Blood Transfus* 2019;35(2):367-368. (PMID: 30988580)
120. **Gupta R***, Kaur G, Kumar L, Rani L, Mathur N, Sharma A, Dahiya M, Shekhar V, Khan S, Mookerjee A, Sharma OD. Nucleic acid-based risk assessment and staging for clinical practice in multiple myeloma. *Ann Hematol.* 2018; 97(12):2447-2454. (PMID: 30056581)
121. Gupta A, Mallick P, Sharma O, **Gupta R**, Duggal R. PCSeg: Color model driven probabilistic multiphase level set based tool for plasma cell segmentation in multiple myeloma. *PLoS One* 2018; 13(12):e0207908 (PMID: 30540767)
122. **Gupta R***, Dahiya M, Kumar L, Shekhar V, Sharma A, Ramakrishnan L, Sharma OD, Begum A. Prevalence of Monoclonal Gammopathy of Undetermined Significance in India- A Hospital Based Study. *Clin Lymphoma Myeloma Leuk.* 2018;18:e345-e350. (PMID: 29980412)

123. Rai S, Bhardwaj U, Misra A, Singh S, **Gupta R**. Comparison between photostability of Alexa Fluor 448 and Alexa Fluor 647 with conventional dyes FITC and APC by flow cytometry. *Int J Lab Hematol*. 2018;40(3):e52-e54. (PMID: 29575796)
124. Patekar M, Gogia A, Tiwari A, Kumar L, Sharma A, Mallick SR, Sharma MC Thulkar S, **Gupta R**. Adult Burkitt lymphoma: An institutional experience with a uniform chemotherapy protocol. *South Asian J Cancer*. 2018;7(3):195-199. (PMID: 30112340)
125. Kashyap R, Awasthi NP, **Gupta R**. Clinical and flow cytometric analysis of paroxysmal nocturnal hemoglobinuria in Indian patients. *J Appl Hematol* 2018; 9:85-90
126. Rani L, Mathur N, **Gupta R***, Gogia A, Kaur G, Dhanjal JK, Sundar D, Kumar L, Sharma A. Genome-wide DNA methylation profiling integrated with gene expression profiling identifies PAX9 as a novel prognostic marker in chronic lymphocytic leukemia. *Clin Epigenetics*. 2017; 9:57. doi: 10.1186/s13148-017-0356-0. (PMID:28572861)
127. Kumar L, Gogi L, Patel A, Mookerjee A, Sahoo R, Malik P, Sharma A, Thulkar S, Kumar R, Biswas A, **Gupta R**, Sharma O. Multiple myeloma with Extra medullary disease: Impact of Autologous stem cell transplantation on outcome. *Bone Marrow Transplantation* 2017; 52:1473-1475 (PMID: 28805789)
128. **Gupta R***, Kumar L, Dahiya M, Mathur N, Harry P, Sharma A, Sharma OD, Shekhar V. Minimal Residual Disease Evaluation in ASCT recipients with Multiple Myeloma. *Leuk Lymphoma* 2017;58(5):1234-1237(PMID: 27658735)
129. Sharma A, Tilak T, Bakhshi S, Raina V, Kumar L, Chaudhary SP, Sahoo RK, **Gupta R**, Thulkar S. Lactobacillus brevis CD2 lozenges prevent oral mucositis in patients undergoing high dose chemotherapy followed by haematopoietic stem cell transplantation. *ESMO Open*. 2017;1(6): e000138. (PMID:28848667)
130. Yanamandra U, Khattry N, Kumar S, Raje N, Jain A, Jagannath S, Menon H, Kumar L, Varma N, Varma S, Saikia T, Malhotra P; for IMAGE Group. Consensus in the Management of Multiple Myeloma in India at Myeloma State of the Art 2016 Conference. *Indian J Hematol Blood Transfus*. 2017;33(1):15-21.PMID:28194051
131. Rani L, Mathur N, Gogia A, Vishnubhatla S, Kumar L, Sharma A, Dubey D, Kaur P, **Gupta R***. Immunoglobulin Heavy Chain Variable Region Gene Repertoire and B-Cell Receptor Stereotypes in Indian Patients with Chronic Lymphocytic Leukemia. **Leuk Lymphoma** 2016;57(10):2389-400(PMID:26942309)
132. Nataraj V, Mathur N, Rani L, **Gupta R**, Bakhshi S. Serial assessment of circulating T regulatory cells and T helper 17 cells in pediatric non-Hodgkin lymphoma: a prospective study. **Leuk Lymphoma** 2016;57(7):1739-42 (PMID:26690272)
133. Sharma S, Arif M, Nirala RK, **Gupta R**, Thakur SC. Cumulative therapeutic effects of phytochemicals in Arnica montana flower extract alleviated collagen-induced arthritis: inhibition of both pro-inflammatory mediators and oxidative stress. **J Sci Food Agric**. 2016;96(5):1500-1510. (PMID: 25966322)
134. **Gupta R***, Chandgothia M, Dahiya M, Bakhshi S, Sharma A, Kumar L. Multi-Drug Resistance Protein 1 as Prognostic Biomarker in Clinical Practice for Acute Myeloid Leukemia. **Int J Lab Hematol** 2016; 38(5):e93-97 (PMID: 27321806)

135. Sharawat SK, Raina V, Kumar L, Sharma A, Bakhshi R, Vishnubhatla S, **Gupta R**, Bakhshi S. High fms-like tyrosine kinase-3 (FLT3) receptor surface expression predicts poor outcome in FLT3 internal tandem duplication (ITD) negative patients in adult acute myeloid leukaemia: A prospective pilot study from India. *Indian J Med Res.* 2016;143(Supplement): S11-S16. (PMID: 27748272)
136. Nataraj V, Tiwari A, Mathur N, Rani L, **Gupta R**, Mallick S, Sharma MC, Bakhshi S. Vascular endothelial growth factor expression in pediatric non-Hodgkin lymphoma: A prospective study. *Pediatr Hematol Oncol.* 2016;33(3):168-70 (PMID:27184774)
137. **Gupta R***. Genomic Classification of Acute Myeloid Leukemia- An Incessantly Evolving Concept. **Natl Med J India** 2016;29(5):283-285 (PMID:28098084)
138. Kumar L, Boya RR, Pai R, Harish P, Mookerjee A, Sainath B, Patekar MB, Sahoo RK, Malik PS, Sharma OD, **Gupta R**. Autologous stem cell transplantation for multiple myeloma: Long-term results. *Natl Med J India.* 2016;29(4):192-199. (PMID: 28050994)
139. Chharchhodawala T, Gajendra S, Tiwari P, Gogia A, **Gupta R***. Therapy related acute myeloid leukemia with t(8;16) mimicking acute promyelocytic leukemia. *Indian J Hematol Blood Transfus* 2016; 32:20-22 (PMID:27408347)
140. Baghmar S, Kumar L, Rani L, Mathur N, Sreenivas V, Malik PS, Tilak TVSVGK, **Gupta R***. Prognostic Relevance of T Regulatory Cells in Patients with advanced-Stage Serous Carcinoma Ovary. *Indian J Gynecol Oncolog* 2016; 14:20.
141. Bahl A, Sharma A, Raina V, Kumar L, Bakhshi S, **Gupta R**, Kumar R. Long-term outcomes for patients with acute myeloid leukemia: A single-center experience from AIIMS, India. *Asia Pac J Clin Oncol.* 2015; 11: 242-252 (PMID:25639656)
142. Shah B, Gajendra S, **Gupta R***, Sharma A. Novel Cytogenetic aberrations in a patient of chronic myeloid leukemia with blast crisis. *J Clin Diagn Res* 2015; 9(5):XD05-XD06 (PMID:26155548)
143. Das A, Singh A, Gajendra S, **Gupta R***, Sazawal S, Seth R. An unusual case of phenotype switch between AML FAB subtypes. *Clin Case Rep.* 2015;3(2):118-20. (PMID: 25767711)
144. Kumar L, Iqbal N, Mookerjee A, Verma RK, Sharma OD, Batra A, Pramanik R, **Gupta R**. Complete response after autologous stem cell transplant in multiple myeloma. *Cancer Med.* 2014; 3:939-46. (PMID: 24777883)
145. Tilak T, Sherawat S, Agarwala S, **Gupta R**, Vishnubhatla S, Bakhshi S. Circulating T-Regulatory Cells in Neuroblastoma: A Pilot Prospective Study. *Pediatr Hematol Oncol.* 2014; 31(8):717-22. (PMID:24684178)
146. Gajendra S, Gogia A, Tanwar P, Sahoo MK, Bhethanabhotla S, Durgapal P, **Gupta R***. Synchronous metastatic pulmonary adenocarcinoma with small cell lymphoma. **Leuk Lymphoma** 2014; 55: 1678-1680. (PMID: 24073807)
147. Sharma S, **Gupta R**, Thakur SC. Attenuation of Collagen Induced Arthritis by Centellaasiatica Methanol Fraction via Modulation of Cytokines and Oxidative Stress. *Biomed Environ Sci.* 2014; 27(12): 926-938 (PMID: 25484009)

148. Gogia A, Raina V, **Gupta R**, Gajendra S, Kumar L, Sharma A, Kumar R, Vishnubhatla, S. Prognostic and predictive significance of Smudge cell percentage on routine blood smear in chronic lymphocytic leukemia. *Clin Lymphoma Myeloma Leuk*. 2014; 14(6):514-7 (PMID: 24656596)
149. Sharawat SK, Raina V, Kumar L, Sharma A, Bakhshi R, Vishnubhatla S, **Gupta R**, Bakhshi S. Quantitative Assessment of BAX Transcript and Flow-cytometric Expression in Acute Myeloid Leukemia: a prospective study. *Hematology* 2014;19(7):404-11 (PMID: 24620954)
150. Tilak TV, Sharawat SK, **Gupta R**, Agarwala S, Khan SA, Rastogi S, Sreenivas V, BakhshiS. Circulating T- regulatory cells in PNET: A prospective study. *Pediatr Blood Cancer* 2014; 61:228-232 (PMID: 23997029)
151. Sharawat SK, Bakhshi R, Vishnubhatla S, **Gupta R**, Bakhshi S. FLT3-ITD Mutation in Relation to FLT3 Expression in Pediatric AML: a Prospective Study from India. *Pediatr Hematol Oncol*. 2014; 31(8):717-22 (PMID: 24498869)
152. Gogia A, Mehta P, Pramanik R, Gupta R. Chronic lymphocytic leukemia with massive ascites: An unusual presenting manifestation. *South Asian J Cancer*. 2014;3(4):235-6 (PMID: 25422818)
153. Gajendra S, **Gupta R***, Chandgothia M, Kumar L, Gupta R, Chavan SM. Chronic Neutrophilic Leukemia with V617F JAK2 Mutation. *Indian J Hematol Blood Transfus* 2014;30(2):139-42 (PMID: 24839370)
154. Gajendra S, Gogia, A, Das P, **Gupta R**, Tanwar P. Acute myeloid leukemia presenting as “Bowel Upset”- A case report. *J Clin Diag Res*. 2014; 8(7): FD09-10 (PMID: 25177572)
155. Gajendra S, Gupta R, **Gupta R***, Kumar L. Coexistence of scleroderma with multiple myeloma: a rare association. *BMJ Case Rep*. 2013; Sep 10; 2013. doi:pii: bcr2013200639. 10.1136/bcr-2013-200639 (PMID: 24022902)
156. Ghosh J, Singh RKB, Saxena R, **Gupta R**, Vivekanandan S, Sreenivas V, Raina V, Sharma A, Kumar L. Prevalence and aetiology of anaemia in lymphoid malignancies. *Natl Med J India* 2013; 26: 79-81 (PMID:24093980)
157. Sharawat SK, **Gupta R**, Raina V, Kumar L, Sharma A, Iqbal S, Bakhshi R, Vishnubhatla S, Bakhshi S. Increased co-expression of c-KIT and FLT-3 receptors on myeloblasts: independent predictor of poor outcome in pediatric acute myeloid leukemia. **Clinical Cytometry** 2013; 84(6): 390-397 (PMID: 23740774)
158. Gogia A, **Gupta R**, Raina V. Disseminated tuberculosis mimicking relapse in Hairy cell leukemia. *Indian J Cancer* 2013;50:321
159. Gogia A, Raina V, **Gupta R**. Massive ascites as a presenting feature of Plasma Cell Leukemia. *Indian J Cancer* 2013;50:301
160. Gogia A, Sharma A, Raina V, Kumar L, **Gupta R**, Kumar R. Prevalence of ZAP70 and CD38 in Indian chronic lymphocytic leukemia patients. *Indian J Cancer* 2013;50(4):333-336

161. Sharawat SK, Bakhshi R, Vishnubhatla S, **Gupta R**, Bakhshi S. BAX/BCL2 RMFI ratio predicts better induction response in pediatric patients with acute myeloid leukemia. *Pediatr Blood Cancer*. 2013; 60:E63-6 (PMID: 23553948)
162. Bhaskar A, **Gupta R***, Sreenivas V, Rani L, Kumar L, Sharma A, Sharma OD, Sharma MC, Thakur SC. Synergistic effect of vascular endothelial growth factor and angiopoietin-2 on progression free survival in multiple myeloma. **Leuk Res**. 2013; 37:410-415 (PMID: 23332455)
163. Baghmar S, Mohanti BK, Sharma A, Kumar L, Prakash G, Kumar S, **Gupta R**, Kumar R, Raina V. Solitary Plasmacytoma: 10 years' experience at AIIMS, New Delhi. *Leuk Lymphoma*. 2013; 54:1665-1670. (PMID: 23163525)
164. Bhaskar A, **Gupta R***, Sreenivas V, Kumar L, Sharma A, Sharma MC, Prasenjit Das P, Thakur SC. Angiopoietins as biomarker of disease activity and response to therapy in multiple myeloma. *Leuk Lymphoma*. 2013; 54:1473-8 (PMID: 23113684)
165. Sharma A, Bahl A, Raina V, Kumar L, **Gupta R**. Dasatinib in chronic myeloid leukemia: A limited Indian experience. *Asia-Pacific Journal of Clinical Oncology*. 2012; 8:375-9 (PMID: 22897916)
166. Gogia A, Sharma A, Raina V, Kumar L, Vishnubhatla S, **Gupta R**, Kumar R. Assessment of 285 cases of CLL seen at single large tertiary centre from Northern India. *Leuk Lymphoma*. 2012; 53:1961-5 (PMID: 22475243)
167. Gogia A, Sharma A, Raina V, **Gupta R**. Priapism as an initial presentation of chronic lymphocytic leukemia. *Leuk Lymphoma*. 2012;53:1638-9 (PMID:22242818)
168. Bhaskar A, **Gupta R***, Kumar L, Sharma A, Sharma MC, Kalaivani M, Thakur SC. Circulating endothelial progenitor cells as potential prognostic biomarker in multiple myeloma. *Leuk Lymphoma*. 2012; 53:635-40. (PMID: 21973309)
169. Naseem S, Kaur S, **Gupta R***, Kashyap R, Nityanand S. Plasma Cell Leukemia: Case Series from a Tertiary Center with Review of Literature. *Ind J Hematol Blood Transfus* 2012; 28:10-14 (PMID:23449039)
170. Ganeshan P, **Gupta R***, Hakim M, Kumar L, Bhaskar A, Sharma A. Reconstitution of regulatory T-cells after autologous transplantation in multiple myeloma. *Int J Hematol*. 2011 ;94:578-9 (PMID:22045305)
171. Agrawal V, Gupta A, **Gupta R***, Sharma MC, Das P. Nonleukemic granulocytic sarcoma of kidney with mixed phenotype blasts: A diagnostic dilemma. *Indian J Pathol Microbiol*. 2011; 54:606-8 (PMID: 21934235)
172. Smeeta G, **Gupta R***, Sharma A, Gupta R, Gogia A. Acute myeloid leukemia with Pseudo-Chediak Higashi granules and intracytoplasmic vacuoles. *Eur J Haematol*. 2011 Jun 16. doi: 10.1111/j.1600-0609.2011.01668.x. (PMID: 21679254)
173. **Gupta R***, Ganeshan P, Hakim M, Verma R, Sharma A, Kumar L. Significantly reduced regulatory T cell population in patients with untreated multiple myeloma. *Leukemia Research* 2011;35: 874-878 (PMID: 21146215)
174. Puri K, Singh P, Das RR, Seth R, **Gupta R**. Diagnostic dilemma of JMML coexisting with CMV infection. *Indian J Pediatr*. 2011; 78: 485-487 (PMID: 21193971)

175. Ghosh I, Bakhshi S, **Gupta R***. Acute Basophilic Leukemia in an Infant with Proptosis. Indian J Pathol Microbiol 2011; 54: 210-211 (PMID: 21393925)
176. Agarwal R, Sreenivas V, **Gupta R**, Bakhshi S. Diagnostic and Follow up Eosinophilia is not Predictive of Outcome in Childhood Acute Myeloid Leukemia. J Pediatr Hematol Oncol 2011;33:e51-53 (PMID: 21285899)
177. Panda D, Gupta N, **Gupta R**, Bakhshi S. Pediatric myelodysplastic syndrome with cytoplasmic vacuolation in myeloid precursors. J Pediatric Hematol Oncol 2011; 33:59-61 (PMID: 21178710)
178. Agarwal P, Sekhar Das S, **Gupta R**, Khetan D, Chaudhary R. Quantification of Feto-Maternal Hemorrhage: Selection of Techniques for a Resource-Poor Setting. Gynecol Obstet Invest. 2010;71:47-52 (PMID: 21160194)
179. Medhi K, Raina V, Kumar L, Sharma A, Bakhshi S, **Gupta R**, Kumar R. Response Assessment of chronic myeloid leukemia (CML) patients receiving imatinib mesylate (Glivec) therapy: Experience from a single center in developing country. Leuk Lymphoma 2010; 51:1850-1854 (PMID: 20849386)
180. Gupta N, Kumar S.S, **Gupta R***, Bakhshi S. Childhood chronic myeloid leukemia with monocytosis. Indian J Pediatr 2010; 77: 1143 (PMID: 20882436).
181. Prabhu SB, **Gupta R***, Seth R. Juvenile myelomonocytic leukemia presenting with co-existent cytomegalovirus infection – A case report. J Pediatric Hematol Oncol 2010;32(4):e153-4 (PMID: 20445410)
182. Singhal M, Raina V, **Gupta R**, Das P. T cell-prolymphocytic leukemia detected in a patient of breast cancer at the time of recurrence: a case report. Cases Journal 2010;3:4 (PMID: 20076807)
183. Agarwal R, **Gupta R***, Bakhshi S, Sharma A. Unusual cytochemical reactivity in granular acute lymphoblastic leukemia: A rare Case report. Turk J Hematol 2010;27:43-45 (PMID: 27265798)
184. **Gupta R***, Bhaskar A, Kumar L, Sharma A, Jain P. Flow cytometric immunophenotyping and minimal residual disease analysis in multiple myeloma. Am J Clin Pathol 2009;132:728-732 (PMID: 19846814)
185. Ganesan P, Thulkar S, **Gupta R**, Bakhshi S. Childhood Aleukemic Leukemia with Hypercalcemia and Bone Lesions Mimicking Metabolic Bone Disease: Case Report and Review of Literature. J Pediatric Endocrinology and Metabolism 2009;22:463-467 (PMID: 19618667)
186. Bhaskar A, **Gupta R***, Sharma A, Kumar L, Jain P. Analysis of bone marrow plasma cells in patients with solitary bone plasmacytoma. Cancer Therapy 2009;7:49-52 (PMID: 26834513)
187. Gupta N, **Gupta R***, Bakhshi S. Transient myeloproliferation mimicking JMML associated with parvovirus infection of infancy. Pediatr Blood Cancer 2009; 52: 411-413 (PMID: 18989883)

188. Srivastava S, Naseem S, **Gupta R***, Kashyap R, Chaudhary R. Paroxysmal nocturnal hemoglobinuria clone in a case of myelodysplastic syndrome rapidly progressing to acute leukemia. *Ind J Hematol Blood Transfus* 2009; 25:33-35 (PMID: 23449039)
189. Agarwal R, **Gupta R***, Bhaskar A, Sharma A, Kumar L. Synchronous Presentation of Multiple Myeloma and Lung Cancer. *J Clin Oncol* 2008; 26:5814-5816 (PMID: 19001336)
190. Naseem S, **Gupta R***, Kashyap R, Nityanand S. T-cell prolymphocytic leukemia – A report of two cases with review of literature. *Ind J Hematol Blood Transfus* 2008;24(4):178-181 (PMID: 23100959)
191. **Gupta R***, Pandey P, Choudhry R, Kashyap R, Mehrotra M, Naseem S, Nityanand S. A prospective comparison of four techniques for diagnosis of paroxysmal nocturnal hemoglobinuria. *Int J Lab Hematol* 2007; 29:119-126 (PMID: 17474884)
192. **Gupta R***, Naseem S, Kashyap R, Paul L. Role of fine needle aspirate immunophenotyping by flow cytometry in rapid diagnosis of lymphoproliferative disorders. *Diagn Cytopathol.* 2007; 35:381-5 (PMID: 17580342)
193. **Gupta R***, Naseem S, Kashyap R, Nityanand S. Immunophenotypic patterns in precursor T-cell neoplasm. *Indian J Pathol Microbiol* 2007; 50:75-77 (PMID: 17474267)
194. Chaudhary R, Das SS, **Gupta R**, Khetan D. Application of flow cytometry in detection of red-cell bound IgG in coombs-negative AIHA. *Hematology* 2006 ; 11 :295-300 (PMID : 17178671)
195. **Gupta R***, Jain P, Bakshi S, Sharma MC. Primary Hodgkin's disease of spleen – a case report. *Indian J Pathol Microbiol* 2006; 49:435-437 (PMID: 17001914)
196. Sharma A, Itha S, Baijal SS, **Gupta R**, Sonkar A, Aggarwal R. Superior sagittal sinus thrombosis and Budd-Chiari syndrome due to paroxysmal nocturnal hemoglobinuria managed with transjugular intrahepatic portosystemic shunt: a case report. *Trop Gastroenterol* 2005; 26:146-148 (PMID: 16512467)
197. Kashyap R & **Gupta R**. Extramedullary Plasmacytoma. *Indian J Med & Paed Oncol* 2005; 26:31
198. **Gupta R***, Jain P, Anand M. Acute basophilic leukemia- a case report. *Am. J Hematol.* 2004; 76:134-138 (PMID: 15164378)
199. **Gupta R**, Jain P, Deo SVS, Sharma A. Flow cytometric analysis of CD5 positive B-cells- a frame of reference for minimal residual disease in Chronic lymphocytic leukemia. *Am. J Clin Path.* 2004; 121:368-372 (PMID: 15023041)
200. Jain P, Kumar R, Anand M, Asthana S, Deo SVS, **Gupta R**, Bhutani M, Karak AK, Shukla NK. Touch imprint cytology of axillary lymph nodes after neoadjuvant chemotherapy in patients with breast cancer. *Cancer* 2003; 99:346-351 (PMID: 14681942)
201. Anand M, Kumar R, Jain P, **Gupta R**, Ghosal N, Sharma A, Agarwal A, Sharma M C. Metastatic anaplastic oligodendroglioma simulating acute leukemia - a case report. *Acta Cytol.* 2003; 47:467-9 (PMID: 12789933)

Chapters in Books (7)

1. Anubha Gupta, Shiv Gehlot & **Ritu Gupta**. Microscopy Cancer Cell Imaging in B-Lineage Acute Lymphoblastic leukemia in State of the Art in Neural Networks & Their Applications, Second Edition, Ayman S El-Baz & Jasjit S Suri (eds), Elsevier 2023; pp 1-28
2. Deepshi Thakral & **Ritu Gupta**. Tumour immunology: immune response, its evasion by tumours and immune based therapies in malignancy in API Textbook of Medicine, Sandhya Kamath (ed), XII Edition, 2022. ISBN No. 9789354656361. Publishers: Jaypee Brothers Medical Publishers
3. Deepshi Thakral & **Ritu Gupta**. “Acute Myeloid Leukemia-An Update” in Hematopathology-Advances in Understanding, Saxena R, Pati HP (eds), Springer 2019; pp 163-182
4. Duggal R, Gupta A, **Gupta R**, Mallick P. (2017) SD-Layer: Stain Deconvolutional Layer for CNNs in Medical Microscopic Imaging. In: Descoteaux M., Maier-Hein L., Franz A., Jannin P., Collins D., Duchesne S. (eds) Medical Image Computing and Computer Assisted Intervention – MICCAI 2017. MICCAI 2017. Lecture Notes in Computer Science, vol 10435. Springer, Cham. https://doi.org/10.1007/978-3-319-66179-7_50
5. **Gupta R*** & Jain P. Role of flow cytometry in plasma cell proliferative disorders. Hematology Today – 2010
6. **Gupta R***. Flow cytometry and Paroxysmal Nocturnal Hemoglobinuria. Hematology Today – 2009
7. **Gupta R***. Myelodysplastic syndromes in API Textbook of Medicine, Shah Siddhartha N (ed), VIII Edition, 2009. ISBN No.: 978-8187540281. Publisher: Association of Physicians India

Books/Journals Edited (3)

1. Molecular and Immunological Advances in Hematological Malignancies (II) in Frontiers in Oncology (2021) Edited by **Ritu Gupta & Gurvinder Kaur**
2. ISBI 2019 C-NMC Challenge: Classification in Cancer Cell Imaging. Eds Anubha Gupta & **Ritu Gupta**. Springer Nature Singapore Pte Ltd. 2019 <https://doi.org/10.1007/978-981-15-0798-4>. Print ISBN978-981-15-0797-7; Online ISBN978-981-15-0798-4
3. Molecular and Immunological Advances in Hematological Malignancies (I) in Frontiers in Oncology (2019) Edited by **Ritu Gupta & Gurvinder Kaur**