Scientist Profile

Name Dr K Rajendran
Designation Scientist – "D"
Date of Birth 15 02 1966
Date of Joining in ICMR 21.02.1994
Date of joining present post 01.09. 2015
Discipline Statistics

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Educational Qualifications (begin with descending order)

DEGREE	INSTITUTION AND LOCATION	YEAR(s)	FIELD OF STUDY
Ph.D	Jadavpur University	2009	Bio-Statistics
M.Sc.	Madras University (Loyola College, Chennai)	1991	Statistics

B.Sc. Bharathidasan University 1989 Statistics

1. Research Experience:

Twenty two year's exposure in Bio-Statistics in the Bio-medical Research includes applied research fields diarrhoeal diseases (past) and Tuberculosis (present), of which design the research proposal, data management, statistical Analysis of Epidemiological studies, Clinical Trials, Microbiological Studies, Vaccine Trails Etc... the details proficiency of statistical application of Multivariate models includes parametric and non-parametric models, cluster models, General linear models, mixed models, regression models, log-linear models, survival Models and time series model.. He has exposure in statistical packages SPSS, S-PLUS, EPI-INFO, in spatial analysis by using Geo-graphical Information system (GIS) Arcview, Gram++ in health research and Diseases Burden Analysis. Acquired 24 trainings in different field in the reputed international and national Instructions includes Awarded WHO fellowship to equip competence of Epidemiology and Bio-Statistics at KKU, Thailand and best poster award in climatic research an International symposium on 2009, WHOs Clinical Data Management training has been received at TU, Thailand. He has acquired exposure in GIS at ISI, Kolkata and IVI, Seoul, Korea. He has presented his research work in 13 national and international conference includes India, Japan, USA, Malaysia and Bangladesh.

2. Membership/Fellowship of Professional Societies/Associations

Indian Statistical Institute, Kolkata

3. Workshops/Conferences/Symposiums: 37

Conferences list

1) An international conference paper entitled "Time series components of climate factors determines real time of cholera infection in Kolkata, India: Methodical approach at 49th US-Japan Conference on Cholera and Other Bacterial Enteric

Infections organized by US-Japan Cooperative Medical Sciences panel was held at "Touchdown Terrace in Bell Hill Griffin Stadium on University of Florida" **Gainesville, Florida, USA** during January 14-16, 2015.

- 2) An international conference paper entitled "Climate factors role in cholera prevalence in Kolkata, India: Time series models at the 48th Joint Meeting and Conference of the US-Japan Panel on Cholera and Other Bacterial Enteric Infections held at International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B) during February 11-13, 2014 at Dhaka, Bangladesh.
- 3) An international conference paper entitled EL Niña and La Niña thirty years persuade cholera in Kolkata, India: Time series model: at 16th International conference on Emerging Infectious Diseases in the Pacific Rim held at International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B) during February 09-11, 2014 at Dhaka, Bangladesh.
- 4) An international conference paper entitled "Influence of Relative Humidity on Persistence of Cholera in West Bengal: A three decade comparison with Time Series Model" at the 47th Joint Meeting and Conference of the US-Japan Panel on Cholera and Other Bacterial Enteric Infections at **Chiba, Japan** held During December 12-14, 2012.
- 5) An international conference on epidemiology with "special focus to modelling infectious and chronic diseases data using Time series and Spatial data analysis" held during 16-18th august 2012 at St Thomas college palai, Mahatma Gandhi University, Kottayam, Kerala-74, India.

Invited as plenary Speaker topic" Dynamic focus on diarrhoeal diseases with influence of climate factors in Kolkata: time series and spatial data analysis"

6) A National Conference on "Climate Change, Oil Spill and Radiation Risk; New Environmental Challenges" Yashwantrao Chavan Pratishthan, Mumbai- 21 during 15th - 16th November 2011.

Invited as plenary Speaker topic" Climate and cholera: A Changing Scenario in Kolkata, West Bengal"

- 7) The 14th International Conference on Emerging Infectious Diseases of the Pacific Rim: Next Generation Diagnostics for Infectious Diseases. October 4-6, 2010 **Penang, Malaysia**
- 8) International symposium on "fifty years of discovery of cholera Toxin: A tribute to SN De.October 25-27, 2009, Kolkata, India

(Awarded paper)

- 9) The 13th International Conference on Emerging Infectious Diseases of the Pacific Rim:Focus on Enteric Diseases. April 6-9, 2009, Kolkata, India
- 10) 9th Asian Conference on Diarrheal Diseases & Nutrition. India, Ashok hotel, New Delhi during 28-30, September 2001
- 11) 10th Asian Conference on Diarrheal Diseases & Nutrition. **Bangladesh, Dhaka** during 7-9, December 2003.
- 12) 11th Asian Conference on Diarrhoeal Diseases and Nutrition held at Bangkok, Thailand during March 8-10, 2006 pp.118-
- 13) A one day national seminar on May 18, 2001 entitled "Mathematical Biology : state of the Art" at Indian Statistical Institute, Calcutta

4. Awards

- 1 **Awarded W.H.O.** fellowship during 2007.
- 2 Invited as Visiting Researcher to Sapporo medical university, **Sapporo, Japan during 2008**.
- Acquired Best **Scientist Award** in climatic Research an International symposium on 2009.

Miscellaneous

FELLOWSHIP AND FOREIGN TRAINING

- 1) **Awarded W.H.O.** fellowship in "Epidemiology and Bio-statistics from July,2 August, 10 2007 at **Khon Kean University, Khon Kean, Thailand.**
- 2) WHO Workshop on "Clinical Data Management Workshop", held during March 24-29 2003 in Faculty of Allied Health science, Thammasat University, Bangkok Thailand
- 3) **Training on GIS** titled "Introductory GIS, Disease Mapping, and Spatial Analysis," held at The **International Vaccine Institute, Seoul, Korea** during 14-18, May 2007.
- 4) **Pre-Conference Workshop** on "Demographic Surveillance and GIS as Tools for Health Research", held on 6th December, 2003 at **ICDDR'B**, **Dhaka**, **Bangladesh**.

- 5) **Invited as visiting researcher** for collaborative research and training on "Time series analysis of cholera outbreaks and climate changes" held at **Sapporo medical university, Sapporo, Japan** during 16th October 15th November, 2008.
- 6) **Invited as visiting Scientist to deliver a talk** titled "Essential Statistics for Bio-Medical Research "in **AMIST University**, **Malaysia** in October 04-06, 2010.

6. Publications: 58

- 1) Bhattacharya MK, Kanungo S, Ramamurthy T, **Rajendran K**, Sinha A, Bhattacharya A, Sarkar BS. Comparison between Single Dose Azithromycin and Six Doses, 3 Day Norfloxacin for Treatment of Cholera in Adult. Int J Biomed Sci. 2014;Dec;10(4):248-51.
- 2) Mullick S, Mandal P, Nayak MK, Ghosh S, De P, **Rajendran K**, Bhattacharya MK, Mitra U, Ramamurthy T, Kobayashi N, Chawla-Sarkar M. Hospital based surveillance and genetic characterization of rotavirus strains in children (<5 years) with acute gastroenteritis in Kolkata, India, revealed resurgence of G9 and G2 genotypes during 2011-2013. Vaccine. 2014 Aug 11;32 Suppl 1:A20-8.
- 3) Mukherjee AK, Chowdhury P, **Rajendran K**, Nozaki T and Ganguly S. Association between Giardiaduodenalis and coinfection with other diarrhea-causing pathogens in India. Biomed Res Int. 2014 May. Volume 2014 (2014), Article ID 786480, 7 pages. http://dx.doi.org/10.1155/2014/786480.
- **4)** Pazhani GP, Bhowmik SK, Ghosh S, Guin S, Dutta S, **Rajendran K**, Saha DR, Nandy RK, Bhattacharya MK, Mukhopadhyay AK, Ramamurthy T. Trends in the epidemiology of pandemic and non-pandemic strains of Vibrio parahaemolyticus isolated from diarrheal patients in Kolkata, India. PLoS Negl Trop Dis. 2014 May 1-8(5).
- 5) Saha DR, Guin S, **Krishnan R**, Nag D, Koley H, Shinoda S, Ramamurthy T. Inflammatory diarrhea due to enteroaggregative Escherichia coli: evidence from clinical and mice model studies. Gut Pathog. 2013 Dec 3; 5(1):36.
- 6) Das P, Singh AK, Mukherjee S, **Rajendran K**, Saha DR, Koley H, Basu S. Composition of Escherichia coli population in the neonatal gut: phylogroups and virulence determinants. J Med Microbiol. 2013 Nov; 62(Pt 11):1680-7.
- 7) Roy S, **Krishnan R**, Mukherjee S, Schneiders T, Niyogi SK, Basu S. Prevalence of ST131 virulence-associated strains among CTX-M-producing Escherichia coli in the gut of hospitalized neonates in India. Diagn Microbiol Infect Dis. 2013 Oct; 77(2):158-9.
- 8) Sumi A, Rajendran K, Ramamurthy T, Krishnan T, Nair GB, Harigane K, Kobayashi N. Effect of temperature, relative humidity and rainfall on rotavirus infections in Kolkata, India. Epidemiol Infect. 2013 Aug; 141(8):1652-61.
- 9) Das P, Singh AK, Mukherjee S, **Rajendran K**, Saha DR, Koley H, Basu S.Composition of Escherichia coli population in the neonatal gut: phylogroups and virulence determinants. J Med Microbiol. **2013** Nov;62(Pt 11):1680-7.
- **10**) Mukherjee P, Ramamurthy T, Bhattacharya MK, **Rajendran K**, Mukhopadhyay AK. Campylobacter jejuni in Hospitalized Patients with Diarrhea, Kolkata, India. Emerg Infect Dis. 2013 Jul;19(7):1155-6.
- 11) Dharanidhran Ramamuthy, Gururaja P.Pazhani, Abirban Sarkar, Ranjan K. Nandy, **Krishnan Rajendran,** Dipika Sur, Bamkesh Manna, Thandavarayan Ramamurthy. Case-Control study on the Role of Eterotoxigenic bacteroides fragilis as a cause of diarrhea among children in Kolkata, India. PLoS ne.2013;8(4):e60622.
- 12) Devarati Dutta, Goutam Chowdhury, Gururaja P. Pazhani, Sucharita Guin, Danjucta Dutta, Santanu Ghosh, **K. Rajendran**, Ranjan K Nandy, Assish K. Mukhopadhyay, Mihir K Bhattacharya, Utpala Mitra, Yoshifumi Takeda, G. Balakrish Nair, and Thandavarayan Ramamurthy. *Vibrio Cholerae* Non-O1, Non-O139 serogroups and cholera-like diarrhea, Kolkata, India. Emerg Infect Dis. 2013 Mar.19(3):464-67..
- 13) Das S, Rajendran K, Dutta P, Saha TK, Dutta S. Validation of a new serology-based dipstick test for rapid diagnosis of typhoid fever. Diagn Microbiol Infect Dis. 2013 May;76(1):5-9.
- **14**) Dutta S, Guin S, Ghosh S, Pazhani GP, **Rajendran K**, Bhattacharya MK, Takeda Y, Nair GB, Ramamurthy T. Trends in the Prevalence of Diarrheagenic Escherichia coli Hospitalized Diarrheal Patients in Kolkata, India. PLoS ne.2013;8(2):e56068. doi: 10.1371/journal.pone.0056068. Epub 2013 Feb 14. PubMed PMID: 23457500;
- **15**) Mazumdar J, Chawla-Sarkar M, **Rajendran K**, Ganguly A, Sarkar UK, Ghosh S, Sarkar MD, Maulik S. Burden of respiratory tract infections among paediatric in and out-patient units during 2010-11. Eur Rev Med Pharmacol Sci. 2013;17:802-808.

- **16**) Chowdhury G, Pazhani GP, Dutta D, Guin S, Dutta S, Ghosh S, Izumiya H, Asakura M, Yamasaki S, Takeda Y, Arakawa E, Watanabe H, Mukhopadhyay AK, Bhattacharya MK, **Rajendran K**, Nair GB, Ramamurthy T. Vibrio fluvialis in Patients with Diarrhea, Kolkata, India. Emerg Infect Dis. 2012 Nov;18(11):1868-71.
- 17) Pativada M, Nataraju SM, Ganesh B, **Rajendran K**, Ramamurthy T, Ganguly S,Bhattacharya MK, Ghosh M, Kobayashi N, Krishnan T. Emerging trends in the epidemiology of human astrovirus infection among infants, children and adults hospitalized with acute watery diarrhea in Kolkata, India. Infect Genet Evol.2012 Aug 11;12(8):1685-1693.
- **18**) Sabui S, Dutta S, Debnath A, Ghosh A, Hamabata T, **Rajendran K**, Ramamurthy T, Nataro JP, Sur D, Levine MM, Chatterjee NS. Real-Time PCR-Based Mismatch Amplification Mutation Assay for Specific Detection of CS6-Expressing Allelic Variants of Enterotoxigenic Escherichia coli and Its Application in Assessing Diarrheal Cases and Asymptomatic Controls. J Clin Microbiol. 2012; 50(4):1308-12.
- 19) Madhu S P, Chatterjee D, Nataraju SM, Rajendran K, Bhattacharya MK, Ghosh M, Kobayashi N, Krishnan T. Emergence of unique variants and inter-genotype recombinants of human astroviruses infecting infants, children and adults in Kolkata, India. Int J Mol Epidemiol Genet 2011;2(3):228-235.
- **20**) B. L. Sarkar, T. S. Bhowmick, M. Das, **K. Rajendran**, G. Balakrish Nair. Phage Types of *Vibrio cholerae* O1 and O139 in the Past Decade in India. Jpn. J. Infect. Dis., 64 (4), 312-315, 2011.
- 21) Ghosh S, Pazhani GP, Chowdhury G, Guin S, Dutta S, **Rajendran K**, Bhattacharya MK, Takeda Y, Niyogi SK, Nair GB, Ramamurthy T. Genetic Characteristics and Changing Antimicrobial Resistance among Shigella spp Isolated from Hospitalized Diarrhoeal Patients in Kolkata, India. J Med Microbiol. 2011;60(10):1460-6.
- **22) Rajendran K**, Sumi A, Bhattachariya MK, Manna B, Sur D, Kobayashi N, Ramamurthy T. Influence of relative humidity in Vibrio cholerae infection: A time series model. Indian J Med Res. 2011 Feb;133(2):138-45.
- 23) Brianna Lindsay, T. Ramamurthy, Sourav Sen Gupta, Yoshifumi Takeda, **Krishnan Rajendran**,G. Balakrish Nair, and O. Colin Stine. Diarrheagenic Pathogens in Polymicrobial Infections. Emerg Infect Dis. 2011; 17(4):606-611.
- **24**) Phalguni Dutta, Utpala Mitra, Shanta Dutta, Dhira Rani Saha, Trailokya Nath Naik, **Krishnan Rajendran**, Tushar Kanti Saha and Mrinal Kanti Chatterjee. Zinc, vitamin A and micronutrients supplementation in pediatric diarrhea: A randomized controlled clinical trial of combination versus monotheropy. J Pediatr. 2011;159(4):633-7.
- 25) Dutta P, Mitra U, Dutta S, Rajendran K, Saha TK, Chatterjee MK. Randomised controlled clinical trial of Lactobacillus sporogenes (Bacillus coagulans), used as probiotic in clinical practice, on acute watery diarrhoea in children. Trop Med Int Health. 2011:16(5); 555-561.
- **26**) Ganesh B, Nagashima S, Ghosh S, Nataraju SM, Rajendran K, Manna B, Ramamurthy T, Niyogi SK, Kanungo S, Sur D, Kobayashi N, Krishnan T. Detection and molecular characterization of multiple strains of Picobirnavirus causing mixed infection in a diarrhoeic child: Emergence of prototype Genogroup II-like strain in Kolkata, India. Int J Mol Epidemiol Genet 2011;2(1):61-72.
- 27) Nandy S, Mitra U, **Rajendran K**, Dutta P, Dutta S. Subtype prevalence, plasmid profiles and growing fluoroquinolone resistance in Shigella from Kolkata, India (2001-2007): a hospital-based study. Trop Med Int Health. 2010 Dec;15(12):1499-1507.
- 28) Nataraju SM, Pativada M, Chatterjee D, Nayak MK, Ganesh B, Bhattacharya MK, Ramamurthy T, Ganguly S, Saha DR, Rajendran K, Ghosh M, Kobayashi N, Krishnan T. Molecular epidemiology of norovirus infections in children and adults: sequence analysis of region C indicates genetic diversity of NVGII strains in Kolkata, India. Epidemiol Infect. 2011; 139: 910-918.
- 29) Nair GB, Ramamurthy T, Bhattacharya MK, Krishnan T, Ganguly S, Saha DR, **Rajendran K**, Manna B, Ghosh M, Okamoto K, Takeda Y. Emerging trends in the etiology of enteric pathogens as evidenced from an active surveillance of hospitalized diarrhoeal patients in Kolkata, India. Gut Pathog. 2010 5;2(1):4.
- **30**) Ghosh S, Batabyal P, **Rajendran K**, Palit A. Typhoid fever in rural communities of West Bengal, India--an age-wise perspective. Jpn J Infect Dis. 2010 May;63(3):219-21.

- 31) Kanungo S, Tsuzuki A, Deen JL, Lopez AL, **Rajendran K**, Manna B, Sur D, Kim D R, Gupta VK, Ochiai RL, Ali M, Seidlein Lorenz von, Bhattacharya SK, Clemens JD. Verbal autopsy to determine causal, age, and gender mortality patterns in an urban slum in Kolkata, India. Bull World Health Organ.2010
- 32) Ganesh B, Nataraju SM, **Rajendran K**, Ramamurthy T, Kanungo S, Manna B, Nagashima S, Sur D, Kobayashi N, Krishnan T. Detection of closely related Picobirnaviruses among diarrhoeic children in Kolkata: evidence of zoonoses? Infect Genet Evol. 2010;10(4):511-6.
- 33) Agrawal AS, Sarkar M, Chakrabarti S, **Rajendran K**, Kaur H, Mishra AC, Chatterjee MK, Naik TN, Chadha MS, Chawla-Sarkar M. Comparative evaluation of real-time PCR and conventional RT-PCR during a 2 year surveillance for influenza and respiratory syncytial virus among children with acute respiratory infections in Kolkata, India, reveals a distinct seasonality of infection. J Med Microbiol. 2009; 58(12):1616-22.
- **34**) Mukherjee AK, Chowdhury P, Bhattacharya MK, Ghosh M, **Rajendran K** and Ganguly S. Hospital -based surveillance of enteric Parasites in Kolkata. BMC Research Notes 2009, 2:110.
- **35**) Saha DR, Datta S, Chattopadhyay S, Patra R, De R, **Rajendran K**, Chowdhury A, Ramamurthy T, Mukhopadhyay AK. Indistinguishable cellular changes in gastric mucosa between Helicobacter pylori infected asymptomatic tribals and duodenal ulcer patients. World J Gastroenterol 2009; 15(9): 1105-1112.
- **36**) Constantin de Magny G, Murtugudde R, Sapiano MR, Nizam A, Brown CW, Busalacchi AJ, Yunus M, Nair GB, Gil AI, Lanata CF, Calkins J, Manna B, **Rajendran K**, Bhattacharya MK, Huq A, Sack RB, Colwell RR. Environmental signatures associated with cholera epidemics. Proc Natl Acad Sci U S A. 2008;105(46):17676-17681.
- **37) K Rajendran**, T.Ramamurthy and S.K. Bhattacharya Log-linear model to asses socioeconomic and environmental factors with childhood diarrhoea using hospital based surveillance J Mod. Appl Stat Methods. 2008; 7(1),304-313.
- **38**) D.R. Saha, **K. Rajendran**, T. Ramamurthy, R.K. Nandy and S.K. Bhattacharya. Intestinal parasitism and Vibrio cholerae infection among diarrhoeal patients in Kolkata, India. Epidemiol Infect. 2008; 136: 661-664.
- **39) K Rajendran**, T.Ramamurthy and D.Sur. Multinomial Logistic Regression Model to explore the inferential risk age groups for infection caused by Vibrio cholerae in Kolkata, India. J Mod. Appl Stat Methods. 2007; 6(1): 324-330.
- **40**) D. N. Gupta, **K. Rajendran**, S. K. Mondal, S.Ghosh and S. K. Bhattacharya. Operational feasibility of implementation of community based zinc supplementation: impact on childhood diarrhoeal morbidity. The Pediatric Infectious Diseases Journal. 2007; 26(4): 306-310.
- **41**) R.Bhattachrya, G.C. Sahoo, M.K. Nayak, **K.Rajendran**, P.Dutta, U.Mitra, M.K.Bhattacharya, T.N. Naik, S.K.Bhattacharya and T.Krishnan. Detection of genogroup I and II human picobirnaviruses showing small genomic RNA profile causing acute watery diarrhoea among children in kolkata, India. Infect. Genet. Evol. 2007; 7:229-238.
- **42**) P Bhattacharya, P.K.Chandra, A.Banerjee, S.Datta, S.Chakraborty, **K.Rajendran**, S.K.Basu, and R.Chakrabarty. Significant increase in HIV,HBV,HCV and syphilis infections among blood donors in Kolkata 2004-2005:exploratory screening reveals high frequency of occult HBV infection. World J Gastroenterol. 2007;13(27):3730-3733.
- 43) K.Rajendran. Cluster Analysis in Bio-Medical Research. Newsletter from SPSS South Asia. 2005-2006;2:8-10.
- **44**) D R Saha, A Pal, **K Rajendran**, and P Dutta. Ultra structural changes in experimental cholera with a non toxigenic non-O1 non-O139 Vibrio Cholerae strain isolated in Kolkata, India. Indian Journal of Experimental Biology., 2006; 44:221-227.
- **45**) D.Chattopadhyay, G.Arunachalam, L.Ghosh, **K.Rajendran**, A.B.Mandal and S.K.Bhattacharya. Antipyretic Activity of Alstonia macrophylla Wall ex A. DC: An Ethnomedicine of Andaman Islands.J Pharm Pharmaceut Sci., 2005;8(3):558-564.
- **46**) R.Charavarty, A.Chowdhury, S.Chaudhuri, A.Santra, M.Neogi, **K.Rajendran**, C.K.Panda and M.Chakravarty. Hepatitis B infection in eastern Indian families: Need for screening of adult siblings and mothers of adult index cases. Journal of the Royal Institute of Public Health, 2005; 119:647-654.
- **47**) D.Sur, D.R. Saha, B.Manna, **K.Rajendran** and S.K.Bhattacharya. Periodic deworming with albendazole and its impact on growth status and diarrhoeal incidence among children in an urban slum of India. Transactions of the Royal Society of Tropical Medicine and Hygiene, 2005;99(4): 261-267.
- **48**) S.Kahali, B.Sarkar, **K.Rajendran**, J.Khanam, S.Yamasaki, R.K.Nandy, S.K.Bhattacharya and T.Ramamurthy. Virulence Characteristics and Molecular Epidemiology of enteroaggregative Escherichia Coli Isolates from Hospitalized Diarrheal Patients in Kolkata, India. Journal of Clinical Microbiology, 2004; 42(9):4111-4120.
- **49**) D.N.Gupta, S.K.Mondal, S.Ghosh, **K.Rajendran**, D.Sur, B.Manna. Impact of Zinc Supplementation on diarrhoeal morbidity in rural children of West Bengal, India. Acta Paediatr ,2003;92:531-536.

- **50**) D.Sur, D.N.Gupta, S.K.Mondal, S.Ghosh, B.Manna, **K.Rajendran** and S.K.Bhattacharya. Impact of Zinc Supplementation on diarrhoeal morbidity and growth pattern of Low Birth Weight infants in Kolkata, India A Randomized Double Blind Placebo Controlled Community Based Study, India. Pediatrics, 2003; 112(6):1327-1332.
- 51) S.Chattopadhyay, S.Datta, A.Chowdhury, S.Chowdhury, A.K. Mukhopadhyay, K.Rajendran, S.K.Bhattacharya, D.E. Berg and G.B.Nair. Virulence gene in Helicobacter pylori strains from west Bengal residents with overt H.Pylori-associated disease versus healthy volunteers. Journal of Clinical Microbiology, 2002; 40(7):2622-2625.
- **52**) Shanta Dutta, **K.Rajendran**, S.Roy ,A.Chatterjee, P.Dutta, , G.B. Nair S.K.Battacharya and S.I. Yoshida. Shifting serotypes, plasmid profile analysis and antimicrobial resistance pattern of shigellae strains isolated from Kolkata, India during 1995-2000. Epidemiol. Infect. 2002;129:235-243.
- **53**) Shanta Dutta, A.Chatterjee, P.Dutta, **K.Rajendran**, S.Roy, K.C.Pramanik and S.K.Battacharya Sensitivity and performance characteristics of a direct PCR with stool samples in comparison to conventional techniques for diagnosis of Shigella and enteroinvasive Escherichia Coli infection in children with acute diarrhoea in Calcutta, India. J. Med. Microbiol. 2001;50: 667-674.
- **54**) T.Ramamurthy, **K.Rajendran**, Pallavi Garg, T.Shimada, Arnab Basu, Nandini Roy Chowdhury, Ranjan K. Nundy, Shinji Yamasaki, S.K.Bhattacharya, Yoshifumi Takeda, G.Balkrish Nair.Cluster Analysis and patterns of Dissemination of Multidrug Resistance among Clinical Strains of Vibrio Cholerae in Calcutta, INDIA. Indian J Med Res. 2000;112: 78-85.
- **55**) P.Garg, S.Chakraborty, I.Basu, S.Datta, **K.Rajendran**, T.Battacharya, S.Yamasaki, S.K.Bhattacharya, Y.Takeda, G.Balakrish Nair and T.Ramamurthy Expending multiple Antibiotic resistance among clinical Strains of Vibrio Cholerae Isolated from from 1992-7 in Calcutta,INDIA. Epidemiol. Infect. 2000;124:393-399.
- **56**) S.K.Mondal, B.K.Sircar, K.Banerjee, P.G.Sengupta, D.N.Gupta, S.Ghosh, **K.Rajendran**, T.Biswas and S.K.Bhattacharya.Lactoferrin content of breast milk and Incidence of Diarrhoea in Infants. Ind. J. Physiol. & Allied Sci., 1998;52(1):35-40.
- 57) Asish K.Mukhopadhyay, Surabhi Garg, Rupak Mitra, Arnab Basu, K.Rajendran, Dharitri Dutta, S.K. Bhattacharya, Toshio Shimada, Yoshifumi Takeda, and G.Balakrish Nair. Temporal Shifts in Traits of Vibrio cholerae Strains Isolated from Hospitalized Patients in Calcutta: a 3- Year(1993 to 1995) Analysis. Journal of Clinical Microbiology.1996;34(10):2537-2543.
- **58**) S.K.Mondal, P.G.Sengupta, D.N.Gupta, S.Ghosh,S.N.Sikder, **K.Rajendran**, M.R.saha, B.K.Sircar and S.K. Bhattacharya. (1996) Occurrence of diarrhoeal diseases in relation to infant feeding practices in a rural community in practices in a rural community in West Bengal, India. Acta Paediatr. 1996;85:1159-62.