

Department of Biochemistry

Bharati Vidyapeeth Deemed To Be University Medical College, Pune 411043.

The Department of Biochemistry was established in June 1989, as a constituent unit of Bharati Vidyapeeth Medical College, Pune.

The Department is located on the 2nd floor of Bharati Vidyapeeth Medical College building and spread over an approx. 10,000 Sq.ft area, providing space for well-equipped undergraduate Practical halls, Lecture and demonstration rooms, Library cum seminar room, Research lab, Specialty lab and well-furnished Faculty rooms.

4th Floor of Bharati Hospital and research harbors the NABL accredited Clinical Biochemistry laboratory with state of art equipments with latest technology of Integration.

The department strives to achieve excellence in the fields of undergraduate teaching and training, diagnostics and research by providing holistic education inclusive of up-to-date knowledge in the field of clinical chemistry and quality reports to the patients of Bharati Hospital.

Goal:

To provide scientific basis of life processes at molecular level to the students and orient them towards the correlation of biochemical analysis and interpretation for diagnosis in health and diseases.

To follow the process of Total Quality Management in all spheres of clinical biochemistry laboratory functioning by streamlining all the processes and systems to achieve satisfaction of patients as well as clinicians.

Objectives:

- To impart the chemical & structural knowledge about biomolecules.
- To provide an understanding of the biochemical and molecular basis of disease.
- To integrate biochemical events with structure and function of body in health and

diseases.

• To enable students to use this knowledge in biochemical analysis to interpret by using recent techniques.

•To update the equipmetation and tests catalogue time to time in clinical biochemistry laboratory to improve quality of reports and decrese Turnaround Time.

| bioch | emical markers for aiding accurate cli | inical prognosis and diagnosis. | luture |
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| Cours | es: | | |
| Denai | rtment is involved in teaching and tra | ining of various undergraduate | and noste |
| cours | es as follows: | | |
| cours | | | |
| Sr. | Course | Year of Commencement | Intak |
| No | | | |
| 1 | MBBS | 1989 | 150 |
| 2 | DMLT | 1996 | 25 |
| 3 | M.D (Biochemistry) | 2010 | 03 |
| 4 | M.Sc (Medical. Biochemistry) | 2000 | 03 |
| 5 | Ph.D (Medical. Biochemistry) | 2007 | 01 |
| 6 | Bsc Skills (Laboratory Sciences) | 2019 | 40 |
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| | CERTIFICATE OF ACCREDITATION |
| BHARATI HOSPI | VIDYAPEETH UNIVERSITY MEDICAL COLLEGE TAL AND RESEARCH CENTRE LABORATORY |
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| | in the field of |
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| Certificate Number | er: MC-2181 |
| Issue Date: | 08/05/2019 Valid Until: 07/05/2021* |
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| | *The validity is extended for one year up to 07.05.2022 |
| This certificate re satisfs (To see | emains valid for the Scope of Accreditation as specified in the annexure subject to continued actory compliance to the above standard & the relevant requirements of NABL, the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org) |
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Teaching and Learning:

Undergraduates:

• They are encouraged to participate in various activities like Quiz; Seminars conducted at departmental, state and national level (Elesevier), their preparations are carried under close supervision of the faculty.

• Proud of about 30 Distinction holders in Biochemistry at I MBBS university exams during past 5 years.

- Remedial Teaching programme is arrange regularly for academically poor students.
- Regular feedbacks are obtained from students and actions are implemented.

Post graduate:

• They are encouraged to attend various CMEs, workshops to gain new knowledge and skills.

• They are also encouraged to present their research work during various state and national conferences and publish papers.

Innovative Group Seminar Activity for The Undergraduate Students:

• Introduction of Activity: Department of Biochemistry is conducting the seminar for Undergraduate students since 2007. Each practical batch of 40 students used. 4 topics were allotted which used to be presented by 4 students from each batch. The presentations were used to be judged on the basis of presentation skills, use of AV aids, question and answers, etc. This activity was very good for individual students' knowledge and skill enhancement.

• Limitation of the Activity: However, with time we came across few limitations of these individual seminars that only 16 students out of 150 were used to get benefited. However, for others, it used to be a passive activity.

• Innovation done this year: Therefore, this year we thought of undertaking a "Group seminar" to explore curricular as well as co- curricular skills like communication, presentation, team building, leadership, etc. The students were supposed to present the topic allotted to their batch by the mode of role play, skit or any other methodology apart from conventional. The performances were judged by the individually faculty on the basis of:

- 1. Scientific Content
- 2. Team Efforts
- 3. Presentation
- 4. Question and Answers.

The performance of Top two teams was presented in front of the whole class.

| Sr. No | Batch | Торіс | Link |
|-----------|---------|---------------------------|------------------------------|
| | | | |
| 1 | Batch A | Oxidative Phosphorylation | https://youtu.be/KsUhEEbjqhY |
| 2 | Batch B | Diabetes Mellitus | https://youtu.be/b2cEgulLpOo |
| 3 | Batch C | Sickle Cell Anemia | https://youtu.be/QkF36Q9B77k |
| 4. | Batch D | Part I :Jaundice | https://youtu.be/aoIWR6jxvVo |
| 5. | Batch D | Part II:Jaundice | https://youtu.be/zi40lk1KD5 |



• Augmentation of Infrastructure of Biochemistry section of central clinical laboratory of Bharati hospital was done during 2015-2016.

• New lab is almost 2000 sq. ft, with upgraded and highly sophisticated and automated integrated equipment.

- This has improved the quality of laboratory reports and turnaround time.
- Technical staff is also encouraged to participate in various CMEs
- Routine tests of Biochemistry section are accredited by NABL (NABL Certificate Number: MC:2181) as per ISO 15189:2012.

Facilities for Hospital Services

| | Leader and Construct Description | Constant Day Island |
|-------|-------------------------------------|---|
| Sr.NO | Instruments Services Provided | Services Provided |
| | | |
| 1 | Fully Automated & Semi Automated | All routine Biochemistry parameters – |
| | Biochemistry Analyser | liver function, kidney function, diabetic |
| | | profile, Cardiac Markers, CRP |
| 2 | Fully Automated Chemiluminesence | Thyroid Profile, Fertility/ANC profile, |
| | Immunoassay | Anemia profile, Tumor markers, vitamins. |
| 3 | UV-VIS Spectrophotometer | Oxidative stress markers, Enzymology, |
| | | Vitamins, Drug concentration study |
| 4 | Electrolyte and Blood Gas Analysers | Serum Electrolytes and Blood gases |
| 5 | Nyco Card Reader and HPLC (D10) | Hemoglobinopathy detection and HbA1c |
| | | measurement |
| 6 | Osmometer | Serum & Urine Osmolarity |
| 7 | Electrophoresis apparatus with | Protein Electrophoresis |
| | Densitometer | |
| 8 | Refrigerated high speed centrifuge | Separation of serum/plasma |
| 9 | Deep freeze and Walk in cooler | Storage of specimen and reagents |
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| Accredited | BHARATI VIDYAF (DEEMED TO BE UNI ADE MEDICAL COLLI (3rd Cycle) PUNE – SATARA ROAD, P y Department of Bioc | PEETH VERSITY) EGE, UNE – 411 hemistry | . 043 |
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| | | VESTIGATI | <u>ONS</u> |
| Equip 1. Alir 2. Au 3. Ser 4. Ele | ments used: hity Integrated Chemistry Platform tomated Analyzer - Randox Imola ni Auto Analyzer EC-7 ctrolyte analyzer - Pro LYTE and Medica E | āsy | |
| Sr. No | Name of The Investigation | Sr. No | Name of The Investigation |
| 1 | Blood Glucose: Fasting/PP/Random/OGCT/GTT | 11 | Serum Triglycerides |
| 2 | Serum Electrolytes – Na, K, Cl, Ionized Ca | 12 | HDL cholesterol |
| 3 | Serum Total Proteins | 13 | Blood Urea |
| 4 | Serum Albumin and A:G ratio | 14 | Serum Creatinine |
| 5 | Serum Globulin | 15 | Total calcium |
| 6 | Serum Bilirubin Total & Direct | 16 | Serum Uric acid |
| 7 | Serum Glutamate Oxaloacetate Transaminase (S.G.O.T) / AST | 17 | Serum Inorganic Phosphorus |
| | Serum Glutamate Pyruvate Transaminase (S.G.P.T) / ALT | 18 | Serum LDH |
| 8 | | 1 | |

| 10 | Serum Cholesterol | 20 | Blood Urea Nitrogen | |
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| E | uinmon+ | al Biochemistry Investigation | 15: | |
|--|---|--|----------------------|---|
| 1 | Alinity Inte | egrated Chemistry Platform | | |
| 2. | Automate | ed Analyzer - Randox Imola | | |
| 3. | Hemoglol | bin testing system (Biorad) - I | D - 10 | |
| 4. | Semi Auto | o Analyzer EC-7 | | |
| 5. | Electrolyt | e Analyzer - Pro LYTE and Me | edica Ea | 5y |
| 6. 7 | Blood Gas Triage Me | S Analyzer - ABL-80 FLEX | | |
| 8. | Bio-Rad E | LISA System | | |
| Sr. No | Na | ame of The Investigation | Sr. No | Name of The Investigation |
| 1 | Serum | Amvlase | 9 | CRP |
| 2 | Serum | Lipase | 10 | Troponin I |
| 3 | HbA1c | | 11 | G6PD |
| 4 | Serum | Magnesium | 12 | ABG with lactate and electrolytes/VE |
| | | Chalinastarasa | 12 | Iron TIBC |
| 5 | Serum | Choimesterase | 15 | II OII TIBE |
| 5 6 | Serum Serum | CPK (NAC) | 13 | Serum Osmolality |
| 5 6 7 | Serum Serum Serum | CPK (NAC) CPK MB | 13 14 15 | Serum Osmolality New Born Screening (NBS):G6PD,Tot Galctose |
| 5 6 7 8 | Serum Serum Serum Blood A | CPK (NAC) CPK MB Ammonia | 13 14 15 16 | Serum Osmolality New Born Screening (NBS):G6PD,To Galctose Sweat Chloride |
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| 5 6 7 8 III) Rc 6 1. At 2. Al S | Serum Serum Serum Blood A butine Enc guipment bbott Arch inity Integ r. No 1 2 3 4 5 | CPK (NAC) CPK MB Ammonia Ammonia Acrinology Investigations: s used: hitect Plus i1000 SR grated Immunoassay Platform Name of The Investigation T ₃ , T ₄ , TSH, Free T ₃ , Free T ₄ Serum Ferritin FSH LH | n | Serum Osmolality New Born Screening (NBS):G6PD,Tot Galctose Sweat Chloride |

| Sr. No | Name of The Investigation | Sr. No | Name of The Investigation |
|--------|---------------------------|--------|--|
| 1 | B HCG | 7 | BNP |
| 2 | Procalcitonin | 8 | CA125 |
| 3 | Vitamin B12 | 9 | PSA |
| 4 | Vitamin D | 10 | Folic acid |
| 5 | Testosterone | 11 | Cortisol |
| 6 | Homocysteine | 12 | New Born Screening (NBS): TSH,17OHP |

| /) Specia Ec 1. 2. 3. | I Endocrinology Investigations: quipments used: Abbott Architect Plus i1000 SR Alinity Integrated Immunoassay Pla Bio-Rad ELISA System | tform | |
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| Sr. No | Name of The Investigation | Sr. No | Name of The Investigati |
| 1 | B HCG | 7 | BNP |
| 2 | Procalcitonin | 8 | CA125 |
| 3 | Vitamin B12 | 9 | PSA |
| 4 | Vitamin D | 10 | Folic acid |
| 5 | Testosterone | 11 | Cortisol |
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| 6 V) Flui Equip 1. Ali 2. Au 3. Se 4. Ele Sr. No 1 2 | Homocysteine d Biochemistry oments used: nity Integrated Chemistry Platform utomated Analyzer - Randox Imola omi Auto Analyzer EC-7 ectrolyte analyzer - Pro LYTE and Me Name of The Investigation Fluid ADA Fluid LDH | edica Easy Sr. No 9 10 | New Born Screening (NBS): TSH,17OHP Name of The Investigati Spot/24 hrs.Urine UPCR CSF Chemical Examinations: I and Sugar |
| 6 V) Flui Equip 1. Ali 2. Au 3. Se 4. Ele Sr. No 1 2 3 | Homocysteine d Biochemistry oments used: nity Integrated Chemistry Platform utomated Analyzer - Randox Imola emi Auto Analyzer EC-7 ectrolyte analyzer - Pro LYTE and Me Name of The Investigation Fluid ADA Fluid LDH Fluid Amylase | edica Easy Sr. No 9 10 11 | New Born Screening (NBS): TSH,17OHP Name of The Investigati Spot/24 hrs.Urine UPCR CSF Chemical Examinations: I and Sugar 24 hrs urinary sodium |
| 6 V) Flui Equip 1. Ali 2. Au 3. Se 4. Ele Sr. No 1 2 3 4 | Homocysteine d Biochemistry oments used: nity Integrated Chemistry Platform utomated Analyzer - Randox Imola mi Auto Analyzer EC-7 ectrolyte analyzer - Pro LYTE and Me Name of The Investigation Fluid ADA Fluid LDH Fluid LDH Fluid Lipase | edica Easy Sr. No 9 10 11 12 | New Born Screening (NBS): TSH,17OHP Name of The Investigati Spot/24 hrs.Urine UPCR CSF Chemical Examinations: F and Sugar 24 hrs urinary sodium 24 hrs urinary potassium |
| 6 V) Flui Equip 1. Ali 2. Au 3. Se 4. Ele Sr. No 1 2 3 4 5 | Homocysteine d Biochemistry oments used: nity Integrated Chemistry Platform utomated Analyzer - Randox Imola emi Auto Analyzer EC-7 ectrolyte analyzer - Pro LYTE and Me Name of The Investigation Fluid ADA Fluid LDH Fluid Amylase Fluid Lipase Fluid Cholesterol | edica Easy Sr. No 9 10 11 11 12 13 | New Born Screening (NBS): TSH,17OHP Name of The Investigati Spot/24 hrs.Urine UPCR CSF Chemical Examinations: I and Sugar 24 hrs urinary sodium 24 hrs urinary potassium Urine Microalbumin |
| 6 V) Flui Equip 1. Ali 2. Au 3. Se 4. Ele Sr. No 1 2 3 4 5 6 | Homocysteine d Biochemistry oments used: nity Integrated Chemistry Platform itomated Analyzer - Randox Imola omi Auto Analyzer EC-7 ectrolyte analyzer - Pro LYTE and Me Name of The Investigation Fluid ADA Fluid LDH Fluid LDH Fluid Lipase Fluid Cholesterol Fluid Triglycerides | 12 edica Easy Sr. No 9 10 11 11 12 13 13 14 | New Born Screening (NBS): TSH,17OHP Name of The Investigati Spot/24 hrs.Urine UPCR CSF Chemical Examinations: I and Sugar 24 hrs urinary sodium 24 hrs urinary potassium Urine Microalbumin Urine Chloride |
| 6 V) Flui Equip 1. Ali 2. Au 3. Se 4. Ele Sr. No 1 2 3 4 5 6 7 | Homocysteined Biochemistry oments used: nity Integrated Chemistry Platform atomated Analyzer - Randox Imola omi Auto Analyzer EC-7 ectrolyte analyzer - Pro LYTE and MeMame of The InvestigationFluid ADAFluid LDHFluid LipaseFluid CholesterolFluid TriglyceridesSpot/24 hrs urinary proteins | 12 edica Easy Sr. No 9 10 11 12 13 13 14 15 | New Born Screening (NBS): TSH,17OHP Name of The Investigati Spot/24 hrs.Urine UPCR CSF Chemical Examinations: and Sugar 24 hrs urinary sodium 24 hrs urinary potassium Urine Microalbumin Urine Chloride Urine Osmolality |

Research and Publications

Thrust Areas of research

- Oxidative Stress and Antioxidants
- Experimental Cataract
- Endocrine disorders
- Molecular Biology
- Laboratory Medicine
- Biochemical Markers in Covid 19
- Medical Education
- Noncommunicable Diseases

Number of Publications 2011 to December 2020

| Sr No | Journals | No of Publications | Indexed in |
|----------|---------------------------|--------------------|--|
| 1 | International Journals | 48 | Pubmed, Scopus, Indian Citation Index, Web of science, |
| 2 | National Journals | 20 | Google Scholar |
| 3 | State | 00 | |

A) Research Projects Funded by BVU, Pune

| Sr. Title of the Project Year | & Status Principal I |
|-------------------------------|----------------------|
|-------------------------------|----------------------|

| No. | | | Co-Investigator |
|-----|---|---------------------------|---|
| 1 | Prevalence and Potential Significance of Vita min D and Cardiovascular diseases. | 2013-2015 Completed | Dr. R. R. Melinkeri Dr. M. K. Padwal |
| 2 | Evaluation of Oxidative stress in respiratory diseases in pediatric patients. | 2013-2015 Completed | Dr. N. A. Vaidya Dr. P. M. Bulakh |
| 3 | Effect of Pyruvate and Cysteine on lens enzyme in experimental cataract | 2013-2015 Completed | Dr. P. H. Padalkar Dr. P. M. Bulakh |
| 4 | Study of medicinal plants on lens enzymes in experimental diabetic cataract | 2013-2015 Completed | Dr. A. M. Hajarnavis Dr. P. M. Bulakh |
| 5 | Evaluation of Homocysteine, Folic Acid, Vitamin B12, MTHFR (C677T and A1298C) and ACE (I/D) gene polymorphisms as risk factors in young patients of Coronary Artery Disease. | 2016 2018 Completed | Dr. R. S. Shivkar, Dr. G. C. Gawade, Dr A. A. Momin , Dr. M. K. Padwal |
| 6 | Study of insertion I deletion polymorphism of angiotensin converting enzyme gene in type 2 diabetic patients with and without nephropathy | 2016 Completed | Dr. A. A. Momin Dr. M. K. Padwal |
| 7 | Effect of antioxidants on Oxidative stress in male Infertility. | 2016 Ongoing | Dr. P. H. Padalkar Dr. M. K. Padwal |

B) ICMR STS Funded Projects

| Sr. No. | Title of the Project | Date of Starting Project | Date of Completion of Project | Name of the Student/ Principal Investigator |
|------------|--|--------------------------------|-------------------------------------|--|
| 1 | Assessment of thyroid function in Euthyroid Obese Medical Students | 01/04/2013 | 01/06/2013 | Mr. Raiba Deshmukh Dr. M. K. Padwal |
| 2 | Association of Serum Ferritin levels with metabolic syndrome and insulin resistance | 01/04/2014 | 01/06/2014 | Mr. Mohsin Murshid Dr. M. K. Padwal |
| 3 | Inter-relationship between blood glucose and bone profile in type 2 diabetes | 01/04/2014 | 01/06/2014 | Miss. Nikhita Sane Dr. P. H. Padalkar |
| 4 | Correlation of liver transaminase and platelet count in Dengue patients | 01/04/2014 | 01/06/2014 | Ms. Akanshya Vaidya Dr. R. R. Shivkar |
| 5 | Study of myocardial injury markers in patients of chronic kidney disease | 01/04/2014 | 01/06/2014 | Ms. Summanshi Singh Dr. A. A. Momin |

C) Ongoing Research Projects: Faculty/PG and UG

| Sr. No. | Title of Project | Funding & Year | Investigators |
|------------|--|--------------------|--|
| 1 | Analysis of biochemical profile of COVID-19 patients admitted in a tertiary care teaching hospital | Department 2020 | Dr. M. M. Pore Dr. M. K. Padwal Dr. A. V. Raichurkar |
| 2 | Study of new cardiac biomarker St-2 in Heart Failure | Department 2020 | Dr. G. C. Gawade Dr. M. K. Padwal |
| 3 | Study of cortisol and vitamin D levels in patients with insomnia | Department 2020 | Ms. Ishwari Tupe Dr. Abdulrahaman A. Momin |
| 4 | Audit of reporting errors in biochemistry section Of NABL accredited laboratory in a tertiary care hospital. | Department 2020 | Dr. G. C. Gawade, Dr. A. A. Momin, Dr. M. K. Padwal, Mr. Shyamkumar Gaisamudre |
| 5 | Role play as a learning tool for communication skills and Empathy | Department 2019 | Dr. Neela Vaidya Dr. N. S. Mani, Dr. M. K. Padwal, Dr. R.A.Sahasrabudhe |
| 6 | Establishing the cut off value of the umbilical cord TSH In Neonates At Tertiary Care Teaching Hospital. | Department 2019 | Dr. AV Raichurkar, Dr. Rahul Jahagirdar, Dr. M. K. Padwal, Dr. Sanjay Lalwani, Dr. P. B. Suryawanshi |
| 7 | Correlation of lipid profile with oral glucose challenge test In Pregnant women | Department 2019 | Dr. Lalana Takale Dr. M. K. Padwal |
| 8 | Assessment of thyroid function in type 2 diabetes mellitus | Department 2018 | Ms. Anjali Gupta Mrs. R. K. Chavan |
| 10 | Molecular markers of AGE-RAGE system, and their association with AGEs, sRAGE and diabetic nephropathy | Department 2018 | Dr. A. A. Momin Dr. Mahesh Kulkarni Dr. M. K. Padwal |
| 11 | Effect of antioxidants on oxidative stress in male infertility | Department 2016 | Dr. P. H. Padalkar Dr. M. K. Padwal |

D) Completed Research Projects: Faculty/PG and UG

| Sr. No. | Title of Project | Year | Investigators |
|------------|--|------|--|
| 1 | Impact of accreditation on awareness and knowledge of technician's about laboratory quality measures in tertiary care hospital | 2018 | Dr. P.H Padalkar Dr. R. R. Shivkar |
| 2 | Evaluation of Serum Homocysteine as a risk factor in young patients of Coronary Artery Disease (CAD). | 2018 | Ms. Anuradha Kumari Dr. R. R. Shivkar |
| 3 | Evaluation of the Pattern of Electrolytes Disturbances in Patients Admitted in ICU | 2018 | Ms. Kushagri Gupta Dr. P. H. Padalkar |
| 4 | You tube as a source of information on hand washing | 2020 | Miss Riya Gulve, Dr.Meghana Padwal, Dr.MeeraModak, Dr.Anuradha Tolpadi |
| 5 | Correlation of TyG(Fasting Triglyceride-Glucose)- BMI index and Liver Transaminases in Polycystic Ovarian Disease(PCOD) | 2018 | Mr. Aman Aher Dr. G. C. Gawade Dr Geeta Wadadekar Dr Meghana Padwal Dr Tushar Panchnadikar |

E) Completed MD Biochemistry Dissertations

| Sr. No. | Title of Dissertations | Year | PG Student & PG Guide |
|---------|---|------|---|
| 1 | Correlation between Prostatic Acid Phosphatase and Prostatic specific antigen in prostatic disorders | 2013 | Dr. G. Karve Dr. A. K. Tandon |
| 2 | High sensitive CRP in hypertension | 2013 | Dr. S. Dawari Dr. R. R. Melinkeri |
| 3 | Oxidative Stress and paraoxonase status in diabetic nephropathy | 2014 | Dr. G. C. Gawade Dr. R. R. Melinkeri |
| 4 | Assessment of Biochemical Risk Factors of Cardiovascular Diseases in Patients with Hypothyroidism | 2014 | Dr. B. D. Kamble Dr. M. K. Padwal |
| 5 | Correlation of Homocysteine, paraoxonase 1 and Malondialdehyde in healthy elderly population | 2015 | Dr. P. N. Nirmale Dr. M. K. Padwal |
| 6 | Association between the levels of serum ferritin and C- reactive protein (CRP) in patients on hemodialysis f projects | 2018 | Dr. A.V. Raichurkar Dr. M. K. Padwal |

F) Completed M. Sc. Medical Biochemistry Dissertations

| Sr. No. | Title of Dissertation | Year | PG Student & PG Guide | |
|---------|--|------------------------------|-----------------------|--|
| 1 | Oxidative stress and antioxidant status in | 2012 | Mr. Rajesh Thakur | |
| 1 | hypothyroidism | 2012 | Dr. M. K. Padwal | |
| | Evaluation of oxidative stress in obese | | Mc Brive Kemethe | |
| 2 | medical students with reference to 2013 | | | |
| | Cardiometabolic Syndrome | Dr. M. K. Padwal | | |
| | Association of Vitamin D deficiency in | | Mr. Kovan Sawad | |
| 3 | cardiovascular disease with respect to | 2014 | Dr. M. K. Dodwol | |
| | Homocysteine, B12 and Lipid profile | 2012 2013 2014 2015 | DI. IVI. K. Fauwai | |
| 4 | Association of serum ferritin levels in | 2015 | Ms. Sholeh Khedri | |
| | cardiovascular diseases with respect to | 2015 | | |
| | lipid profile. | | DI. IVI. K. Pauwai | |

G) Completed PhD Research Projects:

| Sr. No. | Title of project | Year | Ph.D. Guide & Ph.D. |
|---------|--|------|----------------------|
| | | | |
| 1 | Oxidative stress in respiratory diseases in | 2014 | Dr. P. M. Bulakh |
| - | pediatric patients | 2014 | Dr. N. A. Vaidya |
| 2 | Study of medicinal plants on lens enzymes in | 2014 | Dr. P. M. Bulakh |
| | experimental diabetic cataract. | 2014 | Dr. A. M. Hajarnavis |
| 2 | Effect of endogenous antioxidants on lens | 2014 | Dr. P. M. Bulakh |
| 5 | enzymes in experimental cataract. | 2014 | Dr. P. H. Padalkar |
| | Study of single nucleotide polymorphism of | | Dr M B Bankar |
| 4 | lipoprotein lipase and adiponectin genes and | 2016 | DI. IVI. P. Ddilkal |
| | their association with Type 2 Diabetes mellitus. | | Dr. A. A. Momin |
| 1 | | | |

Extension Activities or Community Services

As a part of diagnostic arm of bharati hospital, clinical biochemistry section is regularly involved in various health check-up camps for screening of DM, Thyroid disorders ,Cardiovascular diseases.

New-born screening programme (NBS)

Newborn Screening is a system for identifying genetic, metabolic disorders and other health problems in newborns so that important action can be taken during the critical time before symptoms develop.

It is the most important preventive public health programme of the 21st century. Although yet not done mandatory by Central or State Government authorities.

We have initiated this programme with department of neonatology and pediatrics from August 2019 for all in - born neonates (Birth Weight \geq 2.5 Kg & Gestational age \geq 34weeks) of BHRC, Pune for screening for the following commonest inborn errors of metabolism /biochemical defects.

Sample is collected by Heel Prick Method on designated filter paper, the Dried Blood Spots are processed by ELISA for detection of:

- a) Congenital Hypothyroidism (Thyroid Stimulating Hormone)
- b) Congenital Adrenal Hyperplasia (17 OH Progesterone)
- c) Galactosemia (Total Galactose)
- d) Glucose 6 Phosphate dehydrogenase deficiency. (Glucose 6 Phosphate dehydrogenase)

The program has been initiated on 01/08/2019, we have screened a total of more than 2000 Newborns till 30th September 2021. The parents after receipt of reports, are counselled and guided further at paediatric OPD.



Department is actively involved in carrying out various collaborative research projects with other departments of medical college, constituent units of BVDTU and outside universities.

Faculty also extends their consultancy in guiding research projects in various aspects of clinical biochemistry testing or molecular diagnostic studies.

| Sr. No. | Title of the Project | Year | Investigators | Collaborating Dept/Institute |
|------------|--|------|--|---|
| 1 | Effect of Phytonutrient rich beverages in healthy subjects. | 2015 | Dr. Smita Nilegaonkar Dr. R. R. Melinkeri, Dr. M. K. Padwal | MACS - Agarkar research institute ,Pune |
| 2 | Studies on effect of Prebiotic and resistant starch enriched food preparations in healthy subjects- a preliminary study | 2013 | Dr Vaishali Agte Dr. Smita Nilegaonkar Dr. R. R. Melinkeri, Dr. M. K. Padwal | MACS - Agarkar research institute,Pune |
| 3 | Correlation of plasma level of high dose methotrexate and 6 mercaptopurine with their efficacy and adverse drug reactions in paediatric malignancies. | 2018 | Ms. Manjusha Sajith Dr. Atmaram Pawar Dr. Neela A. Vaidya | Clinical Pharmacy, BVDTU,Pune |

Completed collaborative research projects:

Awards and recognition (Faculty /PG /UG)

4 Dr M K Padwal: Professor and Head

| Sr | Award and Recognition Received | Year |
|----|--|------|
| No | | |
| 1 | Maharashtra state representative of AMBI | 2019 |
| 2 | Laboratory Assessor for NABL as per ISO 15189:2012 | 2018 |

Dr

4

Neela Vaidya : Associate Professor

| Sr No | Award and Recognition Received | Year |
|----------|---|------|
| 1 | Completed Advance Course in Medical Education | 2019 |
| | Technology(ACME) by NMC completed Under GSMC | |
| | KEMH NMC, Nodal Centre Mumbai : | |

k Reviewer:

Dr Neela Vaidya, Dr G C Gawade and Dr A A Momin are the reviewers in the various national and international scientific open access and peer reviewed journals and DBT projects.

k Research Scholars:

| Sr | PhD | Торіс | Year And |
|----|------------------------|--|---------------------------|
| No | (Medical Biochemistry) | | University |
| 1 | Dr Neela Vaidya | Oxidative stress in respiratory diseases | 5 th June 2015 |
| | | in pediatric patients | BVDTU,Pune |
| 2 | Dr A M Hajarnavis | Study of medicinal plants on lens | 5 th June 2015 |
| | | enzymes in experimental diabetic | BVDTU,Pune |
| | | cataract. | |
| 3 | Dr PH Padalkar | Effect of endogenous antioxidants on | 5 th June 2015 |
| | | lens enzymes in experimental cataract. | BVDTU,Pune |
| 4 | Dr A A Momin | Study of single nucleotide | 18 th October |
| | | polymorphism of lipoprotein lipase and | 2016 |
| | | adiponectin genes and their association | MUHS ,Nashik |
| | | with Type 2 Diabetes mellitus. | |

Undergraduate Teaching & Learning Activities:

Horizontal Integration: Liver and Kidney





Learning with COVID 19 Prevention Norms

Role Play:



Felicitation of Academic Achievers and Quiz Participants



Scientific Model Presentation:



Teaching and Training During COVID 19 Pandemic















BHARATI VIDYAPEETH DEEMED TO BE UNIVERSITY MEDICAL COLLEGE, PUNE 43.

DEPARTMENT OF BIOCHEMISTRY We The Guest



Chairperson in CME on Nutrigenomics at Deenanath Mangeshkar hospital November 2017



Chairperson in 2nd MH AMBI 2015, LTMC Sion Mumbai



Judge for Poster in RESCON, BJMC, PUNE 2015



Resource person for GP lectures 2017



Reviewer for Scientific Peer Reviewed Journals



Resource Person in CME at TATA Memorial, Mumbai 2016





Clinical Biochemistry Section: Central Clinical laboratory









