
ओं तुलसी

प्रदीप पौडेल
Pradip Paudel

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Minister for
Health and Population

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Government of Nepal
स्वास्थ्य तथा जनसङ्ख्या मन्त्रालय
Ministry of Health and Population

फोन: ०१-५-३६२५३४
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पत्र संख्या (Ref. No.): ०८१/८२ चलानी नं. (Dispatch No.): ७१२ मिति (Date):.....

Message

I'm pleased to know that National Ayurveda Research and Training center (NARTC) is going to publish its annual report for the year 2080-81. I would like to congratulate the Executive Director and each member of the team for another successful year in the service to the people of Nepal.

The Ministry of Health and Population (MoHP) is strongly dedicated to promoting Ayurveda in Nepal. MoHP has consistently provided strong support for the research, training, and healthcare services conducted at NARTC. NARTC has made important contributions through various research and training programs, enhancing the Ayurvedic healthcare system in Nepal. I believe that NARTC will keep leading in new research and training efforts, helping to spread Ayurvedic healthcare services to the reach of every Nepalese.

I would like to congratulate NARTC team for a productive year, and I am confident that this institution will continue to work in the sector of healthcare as efficiently in the future years to come.

Thank you.
January 2024

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Pradip Paudel
Minister

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I am very happy to hear that the National Ayurveda Research and Training Center, Kirtipur is about to publish its Annual Report for the year 2080/81. I sincerely congratulate the entire team and the Executive Director for their successful work this fiscal year.

NARTC has exerted tremendous efforts to fulfill its missions and objectives in the field of Ayurveda healthcare, research, and training. The Ministry of Health and Population holds a positive outlook regarding this national institution, entrusting it with the responsibilities of conducting research, providing training, and delivering healthcare service. I firmly believe that the strategies and plans executed by this institution will contribute significantly to the development of the Ayurveda healthcare system in the country.

Last but not the least, I would like to convey my warmest congratulations to the entire NARTC team for their productive yearand I am confident that this institution will continue to work in the sector of healthcare as efficiently in the future years to come.

Thank You.

Dr. Roshan Pokhrel

Secretary

Executive Summary

National Ayurveda Research and Training Center (NARTC) is a national institution dedicated to promoting research, training, and healthcare services in Nepal. Since its establishment, NARTC has aimed to be the leading organization for the effective development and promotion of Ayurveda. It has been carrying out different types of research activities in Ayurveda to provide scientific evidence for Ayurvedic treatments.

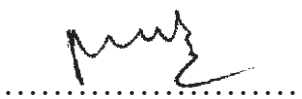
NARTC has been making a steady growth in the field of ayurveda research. This fiscal year, we have continued Anti-proliferative studies of Delphinium denudatum and Paris polyphylla along with antimicrobial and phytochemical analysis. These findings have given us new insights into their potential cancer-fighting abilities. NARTC is very hopeful to develop anti-cancer agents using Ayurvedic formulation in the near future. In this fiscal year, we continued micro-propagation of high value medicinal plants which we aim to distribute among local farmer helping them to improve their socio-economic status.

NARTC has carried out a randomized controlled trial to assess the effectiveness and safety of Trikgud as an additional treatment for uncontrolled type 2 diabetes. This research has helped us raise awareness about the disease, its prevention, treatment, and potential future complications among the general public. This year we have broaden our research area and conducted a KAP study on Ano-rectal Diseases in Sudurpashchim Province of Nepal. We have also conducted a clinical study in the management of osteoarthritis.

NARTC has organized various training programs to improve the skills of Ayurvedic doctors, health workers, and paramedics. This year, we held workshops and training on Basti therapy and the clinical application of Marma Chikitsa, with experts from both national and international institutions, to strengthen our healthcare personnel's expertise. Similarly, we provided training on Agnikarma and the Kshar-sutra technique for treating ano-rectal diseases. In addition, just like in previous years, we continued to offer stress management sessions at NARTC.

In healthcare services, NARTC's hospital has been offering top-notch Ayurvedic treatments. The institution is also becoming a center of excellence in treating ano-rectal diseases using the Kshar-sutra method and managing metabolic diseases through Panchakarma therapy. Our main goal is to stay alert to both the opportunities and challenges the institution faces. NARTC remains fully committed to overcoming these challenges and advancing the field of Ayurveda.

Last but not the least, I would like to extend my heartfelt thanks to all the doctors, research officers, administrative staff, and the entire NARTC family for their continued support and dedication to serving Nepal.



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OVERVIEW

Historical Background

National Ayurveda Research and Training Center (NARTC), under the Ministry of Health and Population, Government of Nepal is an autonomous body primarily working in the field of Ayurveda research, healthcare and capacity building. NARTC was established as a national level apex body for effective development and promotion of Ayurveda as a model institute for advancing research, training and patient care by Ayurveda system of medicine. The NARTC project began since the month of November 2003 when the Government of Nepal proposed to the Government of the People's Republic of China for the unequivocal necessity of NARTC project in Nepal. Under the joint efforts and friendly cooperation between the nations, both the nations officially agreed to implement NARTC project on August 16, 2004. The Government of the People's Republic of China and the Ministry of Health and Population of the Government of Nepal authorized China Jiangxi Cooperation for International and Technical Cooperation to build the project of NARTC on September 21, 2008. The project was commenced on February 20, 2009 and the Government of the People's Republic of China handed NARTC over to Government of Nepal on April 3, 2011. For further enhancement of NARTC, the Government of the People's Republic of China aided medical and training equipment with the value of RMB Yuan 15,400,000/- (RMB Yuan Fifteen Million and Four Hundred Thousands Only) in accordance with the provision of the letters exchanged on August 18 and August 24, 2014 between the nations. The Government of the People's Republic of China officially handed over the equipment to the Government of Nepal on May 11, 2016. In addition to this, Chinese technical team also supported installment of equipment at NARTC. Under Development Committee Act, NARTC was in operation from February 12, 2012 till July 16, 2019.

Location

NARTC is located just outside the premises of Tribhuvan University, Kirtipur with an area of 19482.4 m2 (30 Ropanies). The organization has three major blocks namely Research Hospital block, Research block and Training block. Another four small buildings are designated as animal house, generator and water equipment house, and waste management and cafeteria buildings. Building construction occupied 34563 m2 (17.7%) area of the territory of NARTC.

Vision

- The major vision envisaged for the NARTC is to promote research and training activities for contributing towards the globalization of Ayurveda system of Medicine and for providing evidence based quality Ayurveda health services to people.

Mission

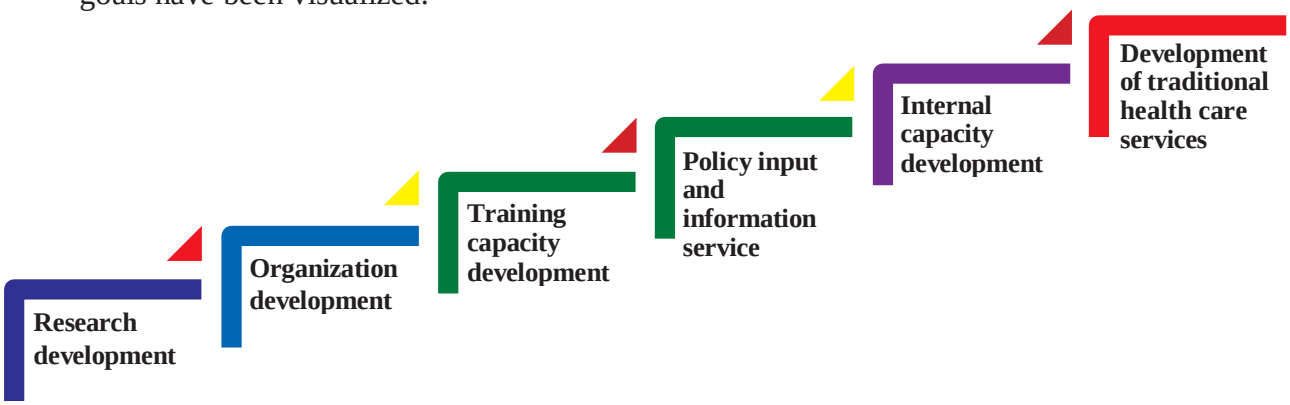
- Support and conduct ethical research in Ayurveda.
- Train and provide skilled manpower in field of Ayurveda.
- Implement evidence based research in treatment to the patient care activities to validate Ayurvedic treatment.
- Advocate and disseminate knowledge of Ayurveda research for the welfare of mankind.

Objectives

- To protect, preserve, develop and commercially utilize medicinal and aromatic plants (MAPs) and natural resources to meet the WTO (World Trade Organization), TRIP S (Trade-Related Aspects of Intellectual Property Rights) and IPRs (Intellectual Property Rights).
- To build linkages with different institutions and entrepreneurs inside and outside the country.
- To develop appropriate technology and transfer of technology and skill up to the grass root level for the conservation, cultivation and capitalization of medicinal plants.
- To develop inventive and innovative steps for development of drugs and clinical practices.
- To initiate and promote research and good practices applied in production, manufacture and supply of Ayurveda and herbal drugs.
- To provide necessary training for the employees of government and non-government of Ayurveda institution and its related human resources.
- To identify measures for enhancing the capacity of developing programs in farming and processing of Medicinal and Aromatic plants.
- To conduct national and international meetings/seminars/conferences.

Strategies

- In order to perform institutional roles and undertake necessary activities following strategies goals have been visualized:



I: Research

1. Contribution in life-science research based on Ayurveda principles
2. Delivering modern research techniques based on Ayurveda guidelines.
3. Delivering information about research, training and health care service.
4. Generating revised evidences for Ayurveda healthcare system in Nepal

II: Training

1. Delivering and improving training services.
2. Developing researches, trainers and experts.
3. Developing capacity building and strengthening professional related governmental and non-government organizations.

III: Health Care Services

1. Strengthening Ayurveda healthcare system of Nepal.
2. Popularizing Ayurveda system of medicine.
3. Contributing in evidence based health care services.

IV: Internal Capacity Development

1. Capacity building within the organization in various related sectors for better output of the organization as a whole.
2. Developing internal organizational and management capacity through various training and capacity building sessions within and outside the institution

V: Policy Input and Information Services

1. Maintain collaboration with existing stake holders, while promoting linkages with new institutions with similar goals and objectives.

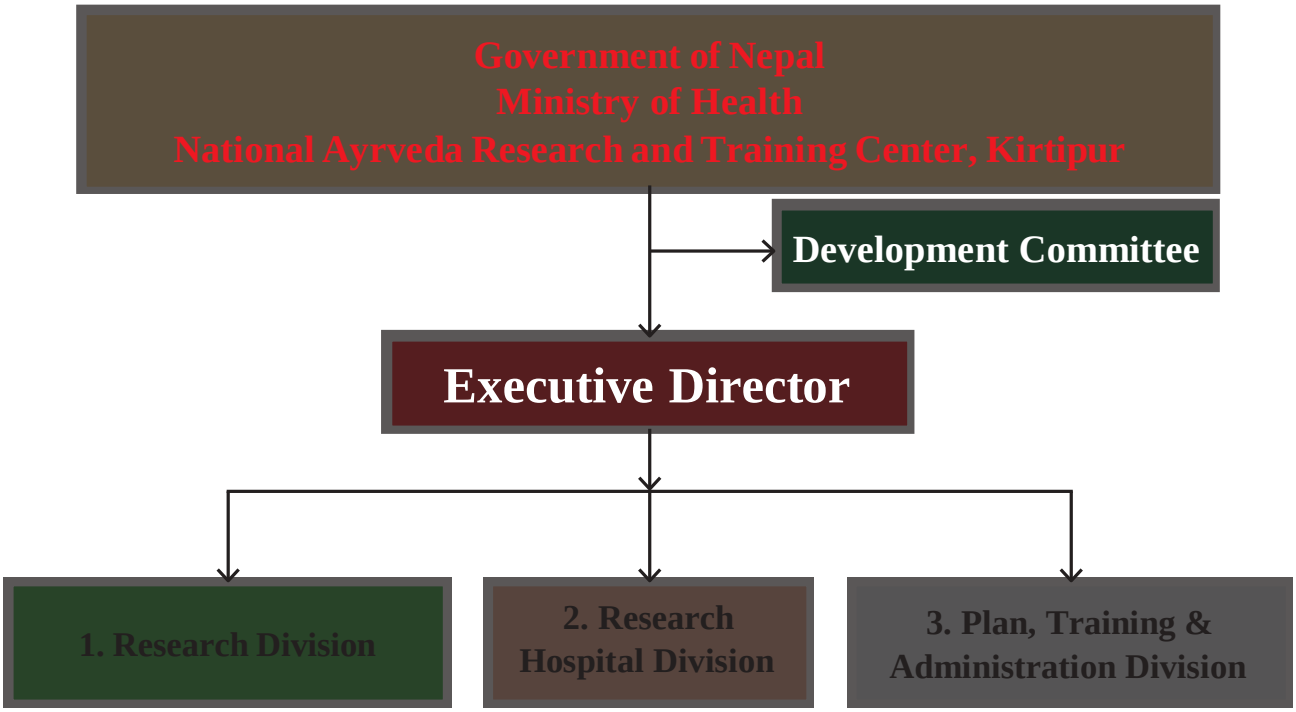
Organization structure

The organizational structure of NARTC has been set up under Development Board Act of Government of Nepal. It is an autonomous institution under Ministry of Health and Population, Nepal. Development Committee of the center delivers policy, approves programs and reviews progress. The Executive Director of NARTC is responsible for overall management of the organization. The heads of the NARTC divisions are responsible for the day to day functioning of their respective divisions. The

organization set up of NARTC is depicted under three divisions:

- Research Hospital Division
- Research Division
- Plan, Training and Administration Division.

Organogram



Provincial Branches of NARTC

Among the seven provinces of Nepal, NARTC already has established its branches in Province 1, Madesh Province and Gandaki Province.

Below is the list of branches currently in service.

- Province 1, Laukahi, Sunsari
- Province 2, Bardibas, Mahottari
- Province 3, Nuwakot, Belkotgadhi
- Province 4, Siranchowk, Gorkha

The Institutional Review Committee (IRC)

The Institutional Review Committee (IRC) of NARTC reviews proposed studies to ensure that it follows internationally and locally accepted ethical guidelines. They monitor studies once they have begun and, where relevant, take part in follow-up action and surveillance after the end of the research. The committee has the authority to approve, reject or stop study or require modification to research protocols.

Objective:

- To promote high ethical standards in research for health.

Functions

- To set policies or offer opinions on ongoing ethical issues in research
- To review international ethical standards governing research involving human participants, as well as by local law in many jurisdictions
- To review required laws of the country in which the research is being sponsored, even if it is not required by the host country's own laws
- To review to publish the results of their investigation, as most medical journals will not publish the results of research that has not received the approval of a research ethics committee
- To protect potential participants in the research
- To take into account potential risks and benefits for the community in which the research will be carried out

Sub-committees

NARTC has set up its experts committee for research, training and health care services. Highly experienced academic professionals are the members of sub-committee. The sub-committee members provide guidance and valuable suggestion in executing and implementing activities or programs in respective services. The three sub-committees at NARTC are:

- Research sub-committee
- Training sub-committee
- Hospital management sub-committee

Research sub-committee

Research sub-committee is organized to review intramural as well as collaborative research projects of NARTC. The committee critically reviews the research projects and recommends the research proposal for grant. The committee also plays vital role in disseminating information of the research result.

Objective :

- To prioritize research area, evaluate research proposals and recommend for grant.

Function

- To prioritize research area
- To select topics for research
- To review technical proposal
- To evaluate proposal
- To recommend for grant
- To disseminate the research
- To finalize the research report
- To recommend publication of the research report

Training sub-committee

This sub-committee overviews all the training activities/programs conducted by NARTC. It prioritizes training subjects, develops curriculum and recommends for conduction of training.

Objective :

- To prioritize training area, develops training curriculum and recommends implementing training.

Function

- To prioritize training area
- To select topics for training
- To develop training curriculum
- To recommend conducting training
- To advise for further improvement

Hospital management sub-committee

This sub-committee generates advice for managing hospital smoothly. It prioritizes health care services and fixes fee. It also suggests recruiting required human resources installing of instruments, monitoring and evaluation of health care services.

Objective :

- To manage health care services, fixes fee and recommends further projects for health care services

Function

- To manage health care services
- To fix fee of the services
- To contribute in clinical research
- To recommend health care projects
- To advise for further improvement

Program and Services

I. Research Hospital

Research based health services in OPD/IPDs are:

- Kaya Chikitsa (Internal Medicine)
- Shalya (Surgery)
- Shalakya (ENT)
- Stri-Prasuti (Gynaecological and Obstetrics)
- Arbuda (Oncology)
- Danta (Dental)

Special Services:

- Panchakarma Therapy
- Ksharsutra
- Acupuncture
- Therapeutic Yoga
- Physiotherapy

Other services are:

- Clinical Pathology
- Ultrasonography
- X-ray
- CT scan
- EEG/ECG
- Endoscopy/colonoscopy
- Pharmacy

Current services in the laboratory

Biochemistry	Serology	Hematology	Others
Glucose	ASO Titre	CBC	Stool R/M
Uric acid	CRP (Qualitative)	ESR	Urine R/M
RFT	CRP (Quantitative)	CT/BT	Occult Blood
LFT	RA Factor	Reticulocyte count	
Lipid Profile	Widal Test	Kala azar	
Calcium	HIV 1& 2	Malaria	
Phosphorus	HBs Ag	HbA1C	
Total Protein	HCV	D-Dimer	
Serum albumin	VDRL		
	H. Pylori		
	TPHA		
	Blood Grouping		

II. Research section

Currently running as well as perspective researches in NARTC are based on following fundamentals.

- Clinical research primarily focused on non-communicable disease

- Drug Research
- Drug Standardization
- Pre-clinical Research / Pharmacological Research
- Medicinal Plant Research (Medico-Ethno Botanical Research, Pharmacognosy),
- Literary Research & Documentation
- Toxicology
- Nutrition

Research units in NARTC:

Microbiology laboratory

- Evaluation of microbial contamination in drug formulations.
- Study activities of herbal plants against pathogenic micro-organisms.
- Antimicrobial activity of indigenous plants of Nepal
- Isolation of enzyme from bacterial culture.
- Preservation of bacterial strains.
- Tests for specified micro-organisms i.e. *Escherichia coli, Staphylococcus aureus, Bacillus subtilis, Klebsiella pneumoniae,* etc.
- Finding role of Ayurveda drugs in the treatment of various diseases

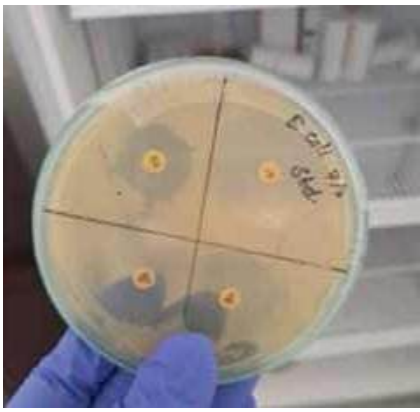
Molecular biology laboratory

- Isolation of plant DNA for digital library such as DNA barcoding.
- Preparation of DNA samples using PCR tools for further studies including sequencing.
- Isolation and characterization of bacterial DNA
- Molecular diagnosis of diseases

Immunology laboratory

- Quantification of hormonal changes during animal model trials of various drugs

- Quantification and analysis of toxic substances
- Disease diagnosis using ELISA
- Disease diagnosis using CLIA
- In-vitro essay for toxicity of various compounds



Instrumental analysis laboratory

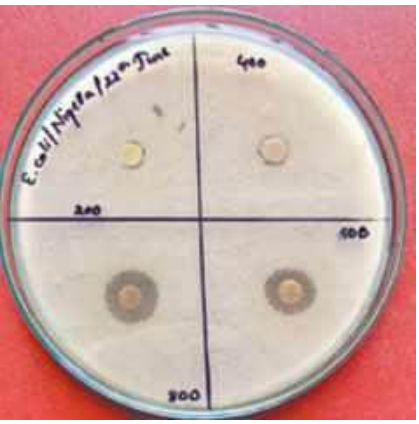
- Chromatographic techniques for separation and analysis of samples.
- Separation of plant product on the basis of polarity, volatility and so on
- Standardization of Ayurveda medicines
- Determination of Dissolution, hardness, total ash, alcohol, extractive values, water soluble extractive, moisture content etc.
- Determination of Refractive index, Specific gravity, Determination of pH values, Determination of melting range and boiling range.
- Determination of viscosity, Determination of saponification, iodine & acid values
- Determination of peroxide value, Determination of alcohol content

Animal/Clinical trials

- Animal breeding, intervention and study of effects of various drugs.
- Development of histopathological laboratory.
- Development and evaluation of a novel drug delivery system of medicinal plant in Nepal
- Development of clinical trials of related diseases

Phytochemical AnalysisLaboratory

- Hot and cold extraction of plant parts using various solvents.
- Concentration of extracts using rotary evaporator.
- Quantitative phytochemical analysis of Proteins & Amino acids, Carbohydrates, Glycosides, Phytosterols& Triterpenoids, Tannins, Flavanoids, Saponins, Alkaloids, and Fats & Fixed oils
- Determination of Total Ash, Determination of Acid Insoluble Ash,



Determination of Water Soluble Ash, Determination of Sulphated Ash

- Determination of Alcohol Soluble Extractive, Determination of Water Soluble Extractive
- Determination of Ether Soluble Extractive (Fixed Oil Content)
- Determination of Moisture Content (Loss on Drying)
- Determination of Volatile Oil in Drugs

Plant tissue culture

- Micro-propagation of medicinal plants of high commercial values.
- Growing endangered medicinal plants of Nepal in a controlled environment.
- Production of medicinal plants for commercial benefits as well as for research.

III. Training section

- Training on skilled development
- Strengthen and capacity building of respective professionals
- Improving capabilities of individual working at different levels of Ayurveda

IV. Other facilities

- Herbarium/ Crude Drug's Library

  NARTC has developed its crude drug museum with more than 300 crude drugs. Crude drugs and medicinal plant species are collected from various parts of Nepal in appropriate time of the year and from appropriate altitudes. They are stored at dry and clean environment for further research and sampling purposes.

- **Library**

  The library is an air-conditioned room with wi-fi internet connection. The library has books and photocopy references on ayurveda, allopathy, sanskrit, science etc. Rare and reference books are also kept separately. The library has started to collect research thesis by NARTC. Automation of library work is in progress and in near future it will digitalize.

- **Conference and Training Hall**

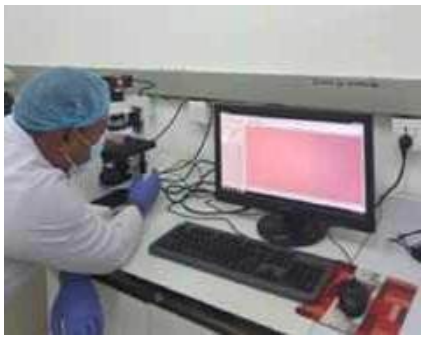
  NARTC has an air-conditioned training hall with a capacity of 50, built with all facilities for conducting training activities. Training hall of NARTC is in good amenity. This is being used for training activities and seminars.

Collaboration and linkage

NARTC is mainly research and training-based institution. It has linked up with national and international research and training organizations.

Some of the national and international organizations are:

- Nepal Health Research Council, Ramshah Path, Kathmandu
- Ayurveda Campus & Teaching Hospital, Kirtipur, Kathmandu
- B.P. Koirala Cancer Hospital, Bharatpur, Chitwan
- China Academy of Chinese Medical Sciences, Beijing, China
- Hebei Research Institute, Hebei, China



Highlights of Work Progress in FY 2080/81

A. HEALTH CARE ACTIVITIES

Research Hospital

NARTC has its own research hospital with a bed capacity of 31 indoor patient department (IPD) and provides outdoor patient department (OPD) services as well. The main objective of the hospital is to provide evidence based medical care through Ayurveda system of medicine to the patients. It prioritizes clinical research along with patient care through its OPD, IPD, Panchakarma therapy, Ksharsutra, acupuncture, therapeutic yoga, physiotherapy, clinical pathology, ultrasonography, X-ray, CT scan, EEG/ECG, endoscopy/colonoscopy and pharmacy. Special treatment facilities are available for anorectal disorders, cancers, rheumatology and endocrinology. Registration is free in the hospital for senior citizens and patients who participate in intramural clinical research. Most of the medicines dispensed for intramural clinical research are manufactured in the pharmacy of NARTC and are provided to the patients free of cost. Health care services are 50 percent discount for the residents of Kirtipur Municipality and senior citizens.

Outpatient Department (OPD)

In the fiscal year 2080/81, a total of 12,913 patients visited the NARTC including 5,039 new cases and 3,727 follow up cases, out of which 4,286 patients attended Kayachikitsa OPD whereas 2,303 patients attended Shalya OPD among other OPDs listed in Table 1.

Table 1. Frequency of patients visited NARTC OPDs in the year 2080/81

Service	Frequency
Total patients/cases	12,913
New cases	5,039
Follow up cases	3,727
Renew cases	4,183
Kaya Chikitsa (I, II & VI) OPD	4,347
Shalya OPD	3,349

The Figure 1 represents the frequency of patients who received the available services at NARTC in the year 2080/81. Among the services, the maximum patients i.e. 1,413 patients received Pathology laboratory services (including Diabetic research tests) followed by Physiotherapy services with 1,313 and acupuncture services with 1,172 patients. Similarly, our Radiology & imaging unit provided services to 1,364 patients comprising 619 tests in X-ray, 572 in USG and 173 ECG tests whereas, 830 patients were enrolled in Panchakarma unit and 650 patients were in Dental unit.

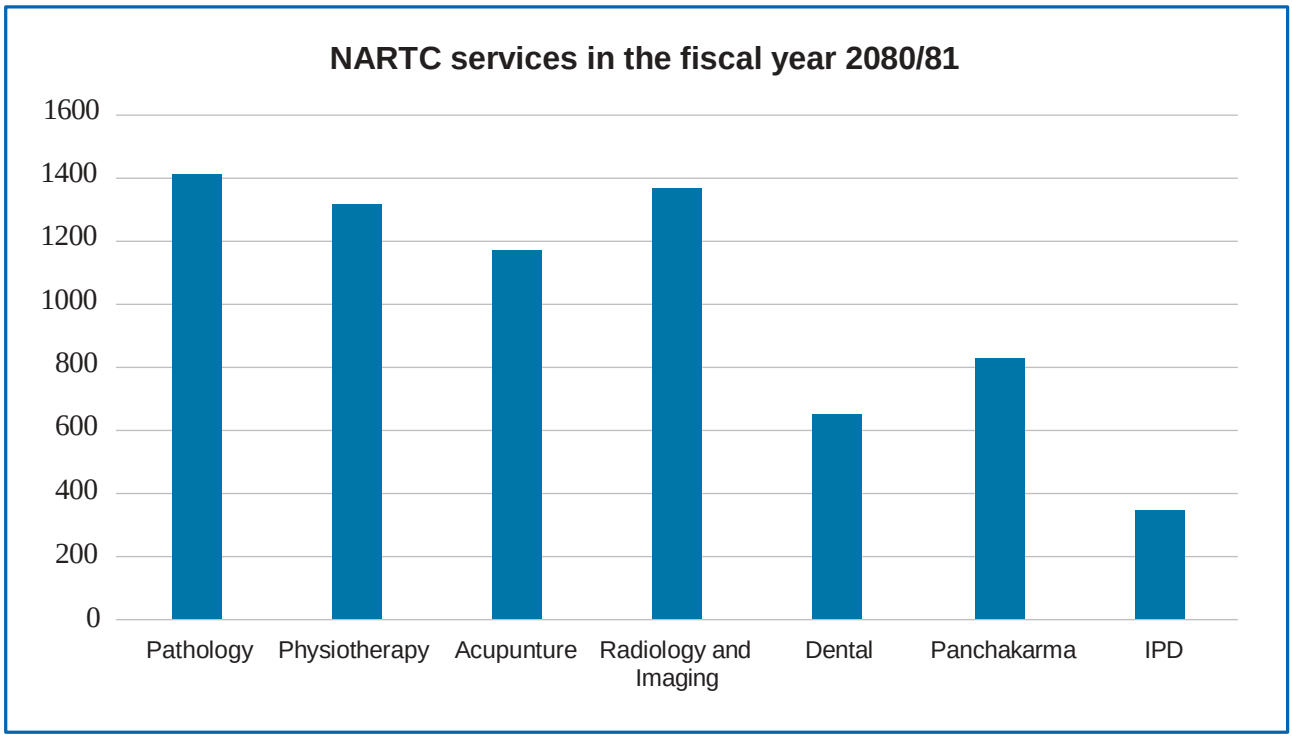


Figure 1: Distribution of services provided by NARTC in the year 2080/81

Pathological Services

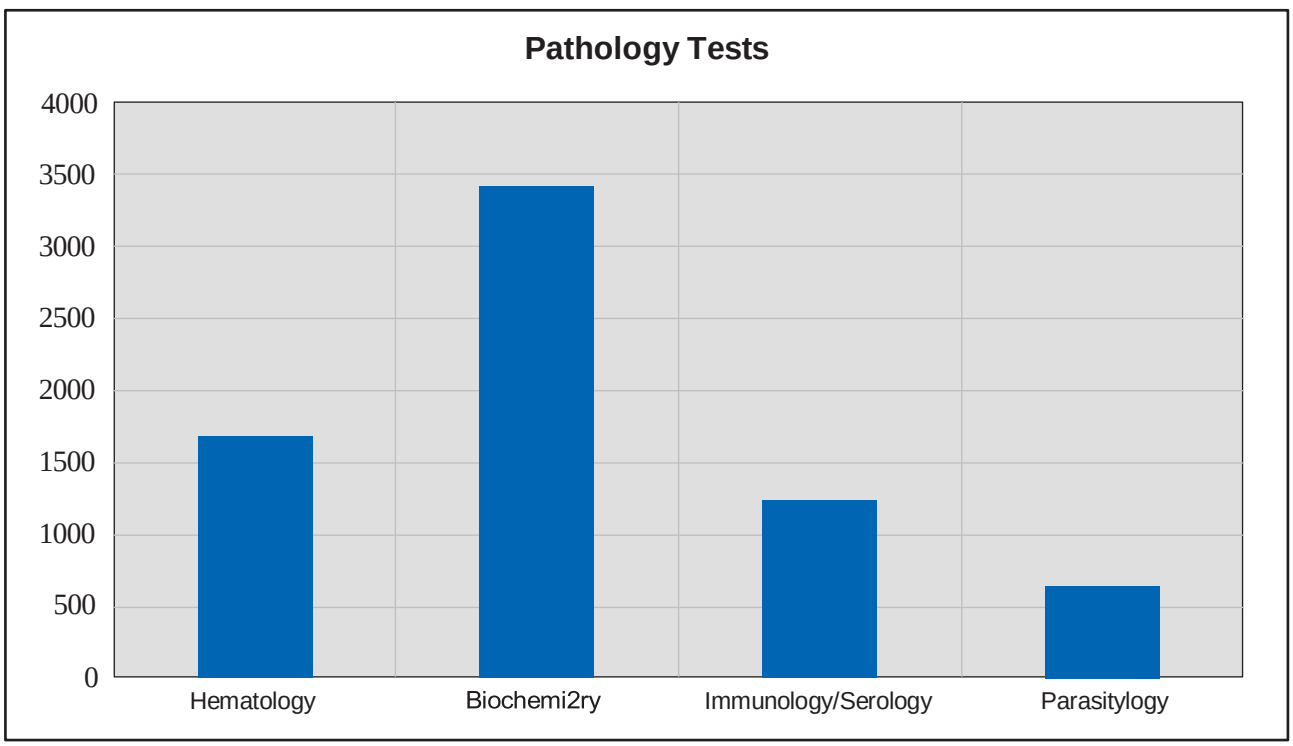


Figure 2 Distribution of routine tests in Pathology laboratory, NARTC in the year 2080/81

In the year 2080/81, from 1,413 patients a total of 6,987 individual tests were performed. Overall, biochemistry section comprised 3,412 tests, hematology accounted 1,688 tests, immunology serology with 1,245 tests and parasitology with 642 tests (Figure 2). The received test samples include blood, urine and stool specimens.

Inpatient Department (IPD)

The total bed capacity for IPD at our institute is 31 beds. During the fiscal year 2080/81, 346 patients were admitted to IPD department, out of which 184 were operated cases.

B. RESEARCH ACTIVITIES

Clinical Research

1. A one year follow-up on "Effect of plant-based diets and GK3 Kasaya (decoction) in Madhumeha (Type 2 Diabetes mellitus)"

Abstract

Uncontrolled DM despite using modern medicines are increasing day by day.So, recently more research interest is centered globally in quest for dietary patterns and alternative medicines to treat DM. In regard to the efficacy of plant-based diets and Ayurvedic medicines for DM, some scientific investigations have resulted plant-based diets and Ayurvedic medicines to be effective and relatively non-toxic. The use of herbs are abundant in context of Nepal and to enhance the value of the herbs, research is needed. There is currently no general optimal meal plan or dietary pattern for T2DM patients. Hence, we attempted the integrated approach (plant-based diet and GK3 decoction) to manage T2DM.

Objectives

i. To find out whether on discontinuing the allopathic medicines and being on a particular plant-based diet can manage T2DM
ii. To evolve an effective drug having Madhumehahara (anti-diabetic) action as per the classical literature of Ayurveda
iii. To evaluate the clinical characteristics; biochemical parameters of DM patients

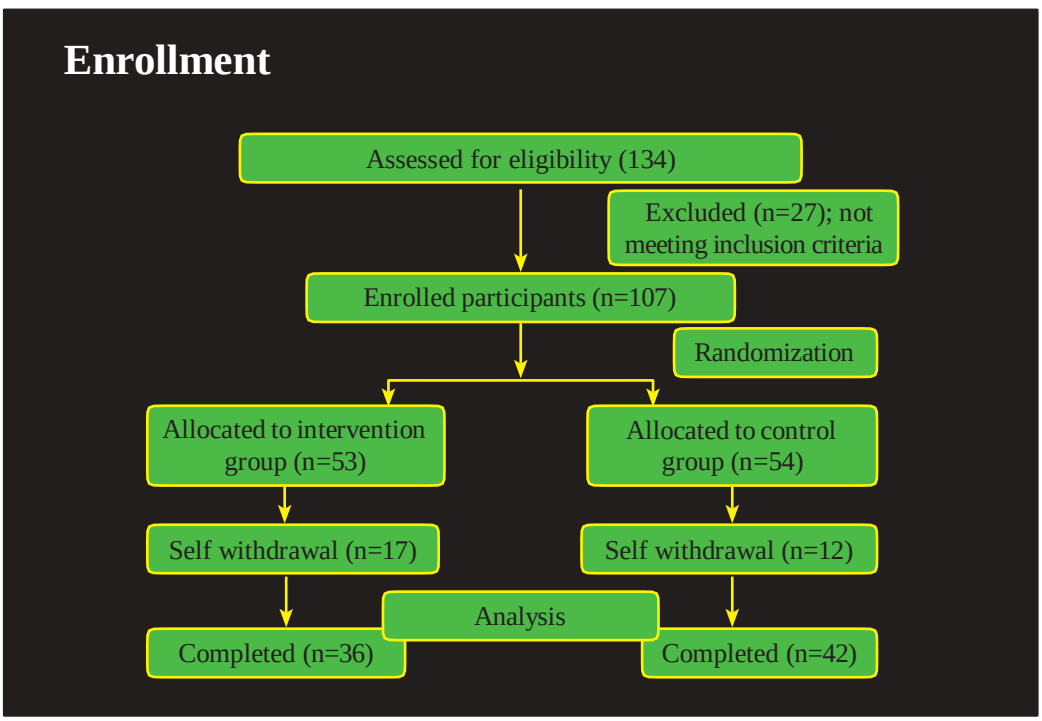


Fig: Sample size and enrollment of patients

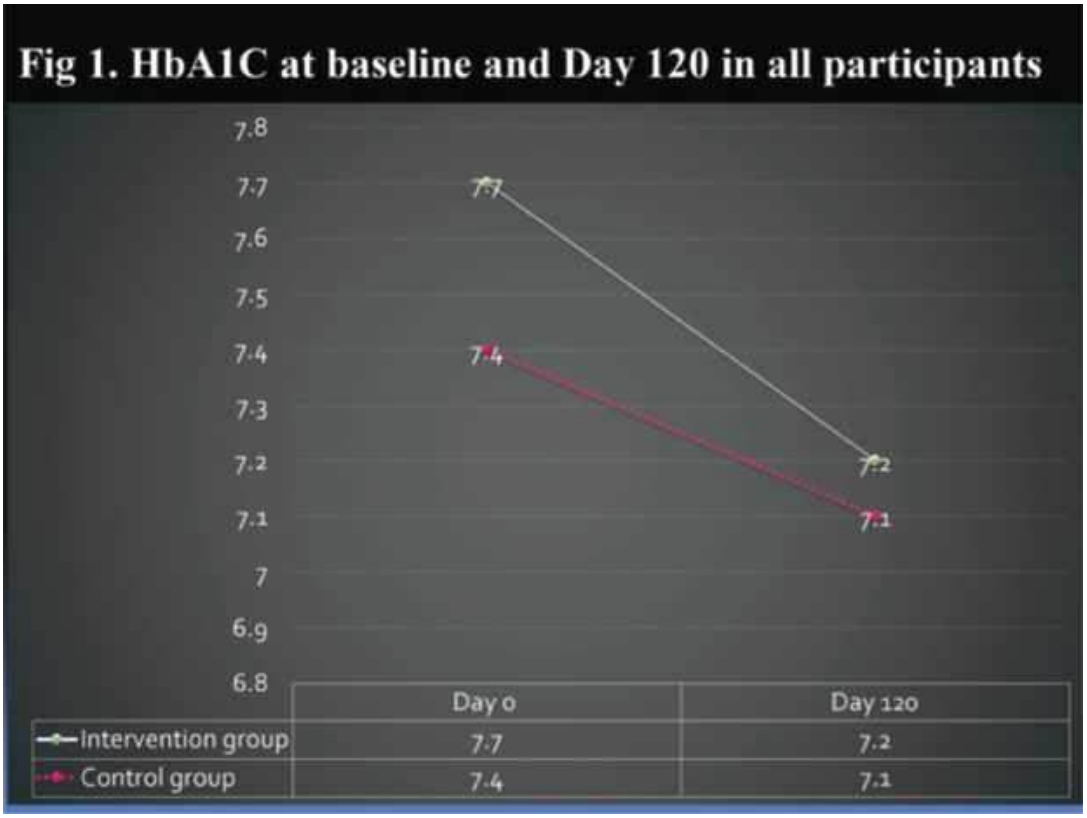


Figure: HbA1C at baseline and day 120 in participants with mean compliance ≥ 9/10 points

Plant based diet and GK3 decoction was found to be effective for glycemic control among T2DM patients. Our effective plant based diet approach can be applied for T2DM patients.

Research Article
Open Access

Effect of plant based diets and GK3 decoction in type 2 diabetes mellitus

Abstract

Background: Numerous interventional studies have indicated that plant-based diets offer medical advantages, particularly in regulating glycemic levels, for individuals with type 2 diabetes mellitus (T2DM). Nonetheless, there have been no clinical trials conducted in context of Nepal, where reliance on plant-based foods is more common than in Western societies. This study aims to compare the impact of plant-based diets along with decoction of *Guduchi* (*Tinospora cordifolia*), *Katuki* (*Neopicrorhiza scrophulariiflora*), *Khadira* (*Acacia catechu*) and *Kakamachi* (*Solanum nigrum*), termed as GK3 decoction in patients diagnosed with T2DM among Nepalese population.

Materials and methods: Participants diagnosed with T2DM were intervened with plant based diets and GK3 decoction (n = 36) for a duration of 12 weeks. Glycosylated hemoglobulin (HbA1c), fasting plasma glucose (FBG), 2-h post-prandinal glucose (2-h PPG), complete blood count, lipid profile, renal function test, liver function test, c-reactive protein levels were measured at days 0, 30, and 120, with the primary study endpoint being the change in HbA1c levels over the 120 days.

Results: There was a statistically significant decrease of HbA1C levels of the participants by 9.0 % after intervention of plant based diets with GK3 decoction at week 12. Likewise, there was a statistically significant decrease in FBG, 2-h PPG, diastolic blood pressure and high-density lipoprotein cholesterol, hemoglobulin and red blood cell counts, but increase in triglyceride levels in the participants after the intervention at day 120 when compared with day 0.

Conclusion: Plant based diets with GK3 decoction was found to be effective for glycemic control among T2DM patients. However, there was onset of anemia in the participants after the intervention. Hence, the plant based diets with GK3 decoction to manage T2DM could not be recommended and further randomized controlled trials are warranted to confirm the study findings.

Keywords: type 2 diabetes mellitus, plant-based diets, GK3 decoction, HbA1c, Nepal

Volume 11 Issue 1 - 2024

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Received: December 28, 2023 | **Published:** January 15, 2024

Abbreviations: IDF, International Diabetes Federation; T2DM, Type 2 diabetes mellitus; GK3, *Guduchi, Kutaki, Khadira and Kakamachi*; NARTC, National Ayurveda Research and Training Center; FPG, fasting plasma glucose, 2-h PG, 2-h plasma glucose; OGTT, oral glucose tolerance test; RPG, random plasma glucose; HbA1C, glycosylated hemoglobulin; API, Ayurvedic Pharmacopoeia of India; WBCs, white blood cells; RBCs, red blood cells; Hb, hemoglobulin; ALT, alanine aminotransferase; AST, aspartate aminotransferase; ALP, alkaline phosphatase; HDL, high-density lipoprotein; LDL, low-density lipoprotein; CRP, c-reactive protein; WC, waist circumference; BMI, body mass index; SPSS, statistical package for the social sciences; DBP, diastolic blood pressure

Introduction

Diabetes is a major worldwide health challenge affecting individuals, families, communities, and governments. International Diabetes Federation (IDF) estimated that 537 million people worldwide have diabetes in 2021. About 6.7 million deaths are directly attributed to diabetes in 2021.[1] Despite there are various anti-diabetic medicines which have been in used since few decades, those medicines possess adverse effects.[2] A balanced diet represents a fundamental aspect in the management of type 2 diabetes (T2DM), alongside regular exercise and medication.[3] Diet plays a crucial role in preventing and controlling T2DM, reducing the risk for individuals with obesity and pre-diabetes, and mitigating associated complications.[4] Numerous cohort studies have indicated a notable decrease in the risk of diabetes among individuals adhering to a plant-based diet when compared with other eating patterns.[5–11] Researchers have suggested that adopting a plant-based diet can offer clinical benefits in managing diabetes.[12,13]

To elucidate the Ayurvedic intervention in diabetes mellitus, correlation of terminology is needed. In Ayurveda, diabetes mellitus can be correlated with the term "*Madhumeha*. With references to *Brihat-Trayee* and *Laghu Trayee* (authentic textbooks of Ayurveda), it has been mentioned that sedentary lifestyles, high-fat diet, dairy products and meat consumption are one of the etiological factors in causing *Madhumeha*.[14–18] As regards to drugs in Ayurveda, there are so many drugs and formularies but the main drugs are either bitter (*Tikta*) or astringent (*Kashaya*) in taste. They improve the fat and carbohydrate metabolism.[19] The selected herbs *Guduchi* (*Tinospora cordifolia*), *Katuki* (*Neopicrorhiza scrophulariiflora*), *Khadira* (*Acacia catechu*) and *Kakamachi* (*Solanum nigrum*) were based on *Pramehahara* (Anti-diabetic) property mentioned in *Bhavaprakasha Nighantu*.[20] Clinical trial studies have found that *Tinospora cordifolia* extracts and its individual components can prevent and treat diabetes.[21–24] Previous studies have demonstrated the anti-hyperglycemic effects of Picrorhiza kurroa extracts.[25–29] Similarly, in vitro and in vivo studies have proposed that *Khadira (Acacia catechu)* and *Kakamachi (Solanum nigrum)* have anti-hyperglycemic effects.[30–37]

The escalating prevalence of uncontrolled T2DM despite the use of modern pharmaceuticals has prompted heightened global research

2. Role of Tiktaksheera Basti and Vyoshadi Guggulu in the management of Sandhigata Vata (Osteoarthritis).

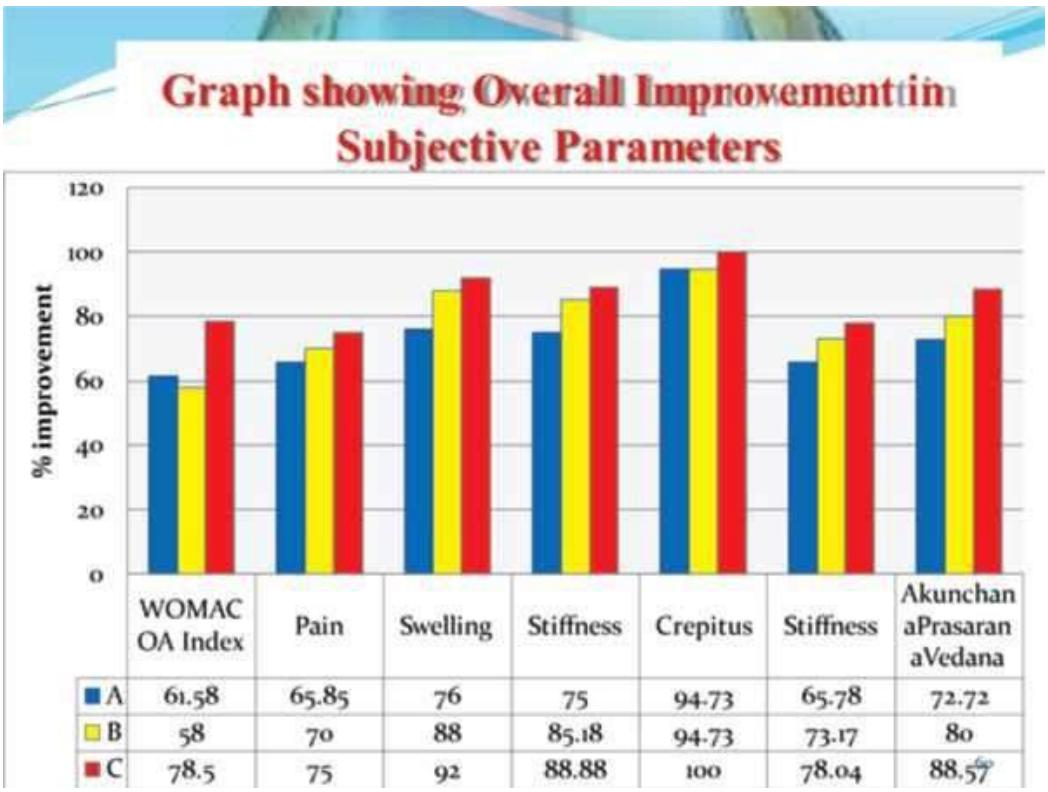
Abstract

Sandhigata Vata (osteoarthritis) is VataVyadhi which is associated with Kshaya of Dhatus especially in Vriddhavastha. Ayurveda mentioned various therapeutic options for the management of this condition and Basti Karma is one such approach. Tikta Dravya Siddha Basti advised for Asthi Kshaya Janya Roga since Sandhigata Vata is also Asthi Kshaya Janya Roga hence in present study we selected Tikta Dravya Siddha Basti and Vyoshadi guggulu in the management of Sandhigata Vata, The study observed marked improvement in diseases symptoms and elevation in calcium level may be due to the Yapana, Brimhana, Shodhan and Vata shamak properties of Tikta Dravya Siddha Ksheer Basti.

Ojectives:

- To assess efficacy & safety of Vyoshadi Guggulu in the management of Sandhigatavata.
- To evaluate the effect of Tiktaksheera Basti in the management of Sandhigatavata.
- To assess the comparative effect of Vyoshadi Guggulu & Tiktaksheera basti in the management of Sandhigatavata

Findings:



	WOMAC OA Index	Pain	Swelling	Stiffness	Crepitus	Stiffness	Akunchan aPrasaran aVedana
A	61.58	65.85	76	75	94.73	65.78	72.72
B	58	70	88	85.18	94.73	73.17	80
C	78.5	75	92	88.88	100	78.04	88.57

Fig: Research findings of overall improvement in subjective parameters

Medicinal Plant Research

1. Assessment of Phytochemical, Antioxidant, Antimicrobial, and Antiproliferative Properties of Paris polyphylla on A549 Human Lung Cancer Cells

Research Summary

There is significant variability in the active constituents of the same plant species at different developmental stages, influenced by varying environmental conditions. In the context of the Nepalese foothills of the Himalayas, there is inadequate scientific information regarding the importance of Paris polyphylla varieties found in this region. Meanwhile, the global rise of antibiotic resistance, driven by the emergence of multidrug-resistant bacterial strains, poses a serious threat to public health. Simultaneously, there is a worldwide quest for novel anticancer drugs to address the growing burden of cancer and the limitations of existing treatments.

Objectives:

- To collect, identify, authenticate and prepare sample of P. polyphylla
- Preparation of a methanolic extract & phytochemical screening
- Study anti-oxidant activity through DPPH scavenging activity in-vitro.
- Study anti-bacterial activity against pathogenic bacterial strains.
- To investigate the effect of Paris polyphylla Sm. extract on proliferation in A549 human lung cancer cell line

Collection of plant sample

Location: Mountain botanical garden, Daman, Makwanpur. Department of Plant resources.

Altitude: 2325 m

GPS Coordinates: 27.60870 N, 85.09384 E

Fig: Collection of P. polyphylla

Results:

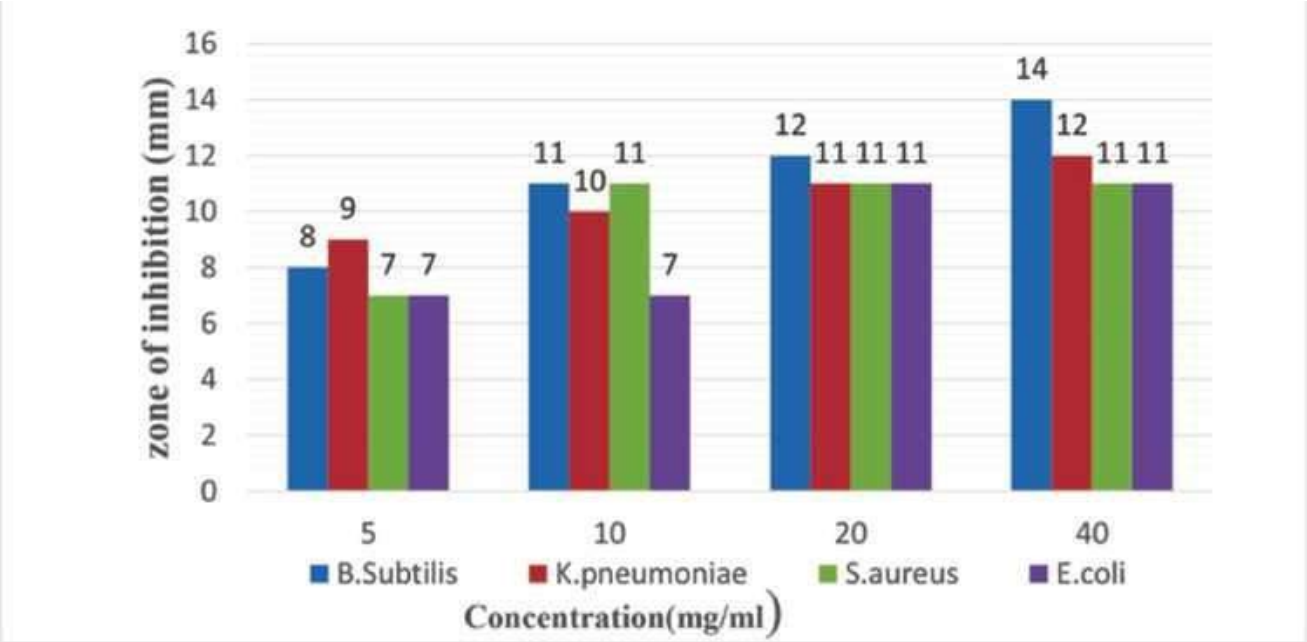


Figure: Antibacterial activity of Paris polyphylla rhizome extracts (conc=1gm/ml)

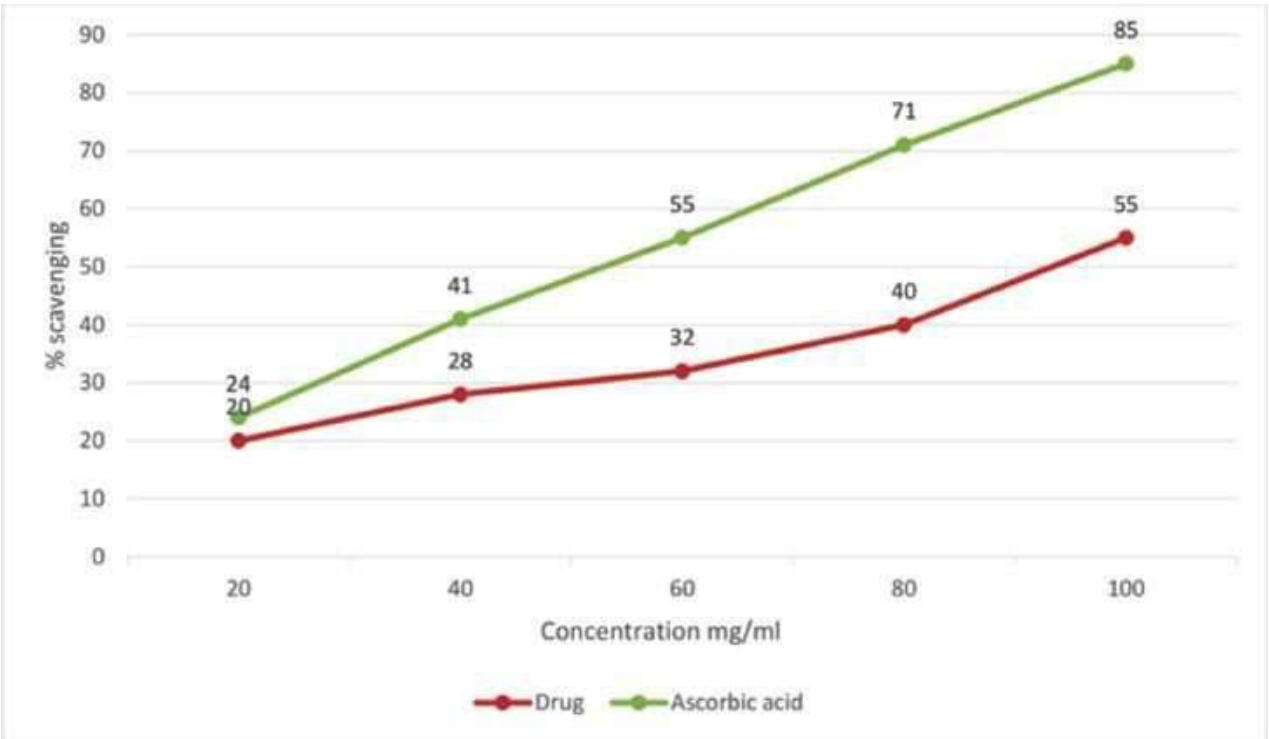


Figure: DPPH radical scavenging activity of Ascorbic acid and methanolic extract of P. polyphylla. The moderate antioxidant activity of the drug is due to the high content of total phenolic and saponins.

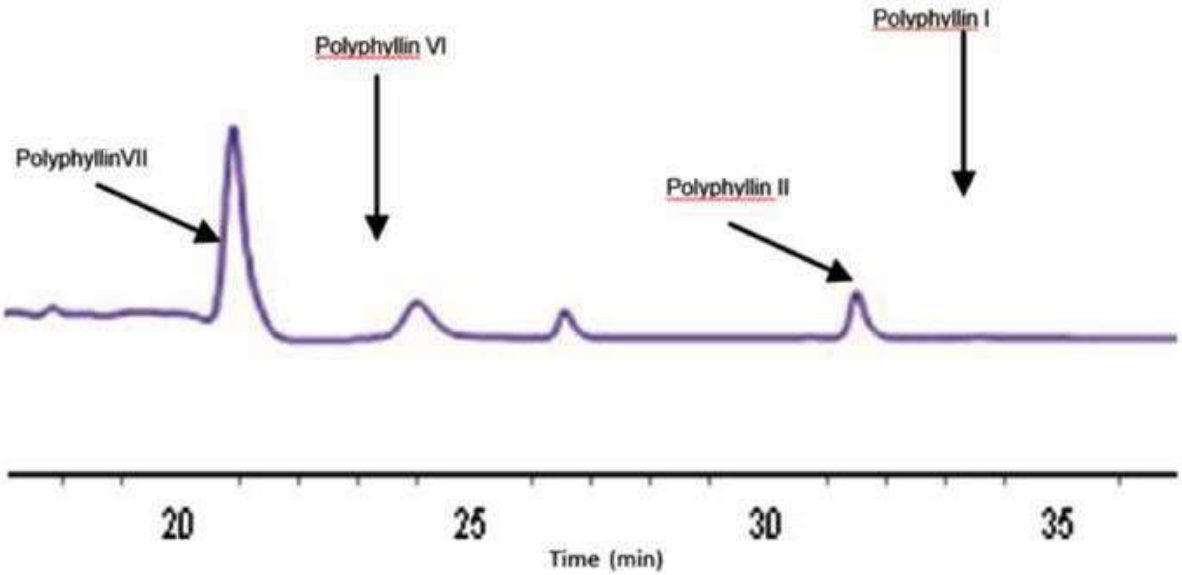
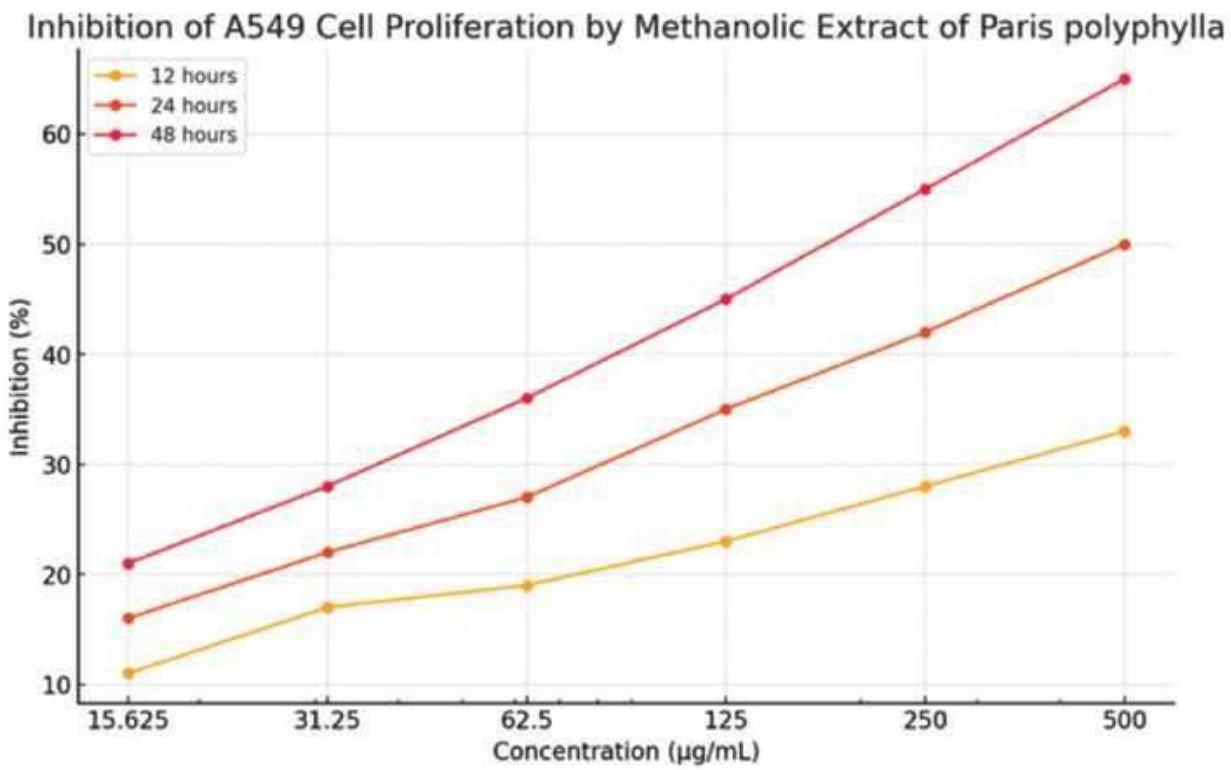
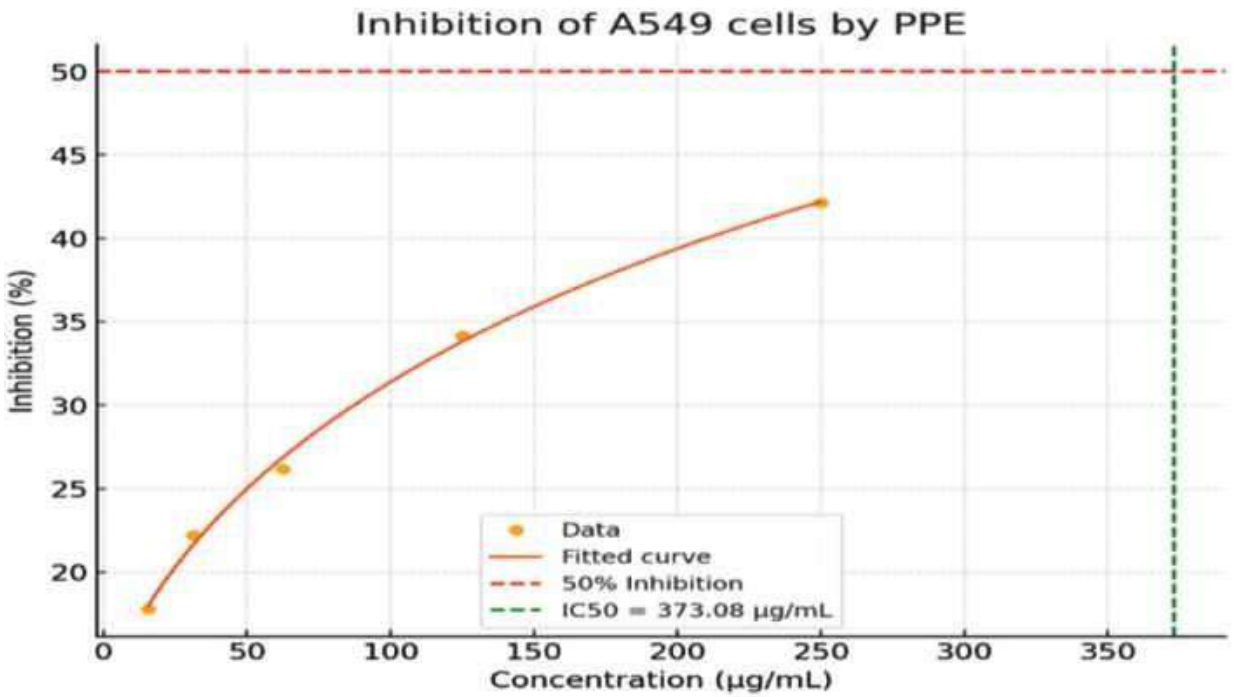


Figure: HPLC curve of methanol extract of the sample 10 µl of extract was injected and absorbance was monitored at 210 nm.





Key Findings: Paris polyphylla Sm. extract shows promising antimicrobial and anti-proliferative activity.

Implications: Potential for development as a therapeutic agent.

Future Research: Requires further studies on mechanism and in vivo effects.

2. Assessment of Phytochemical, Antioxidant, Antimicrobial, and Antiproliferative Properties of Delphinium denudatum Wall on A549 Human Lung Cancer Cells.

Research Summary

The perennial flowering plant Delphinium denudatum Wall., commonly known as Jadwar in India and Nirvisha in Ayurveda, is distributed across subtropical to alpine regions, spanning from Pakistan to Central Nepal, the Indian subcontinent, and Indochina. While traditionally used as an ornamental plant, all members of the genus Delphinium are known to be toxic to humans and livestock. Despite this toxicity, D. denudatum has been widely used in traditional medicine to treat skin diseases, respiratory disorders, snake poisoning, and as anti-inflammatory and diuretic remedies. Given that cancer remains one of the leading causes of mortality worldwide, there is growing interest in exploring plant-based compounds for their anti-cancer properties. This study aims to evaluate the anti-cancer effects of D. denudatum on the U251 MG cell line, providing scientific insight into its potential therapeutic applications.

Objectives:

- Isolate the essential phytochemical constituent and conduct the qualitative and quantitative analysis of Delphinium denudatum plant extract
- Identify antimicrobial and antioxidant properties of crude extract
- Investigate Anti-proliferative activity of Delphinium denudatum Wall. in U251 MG Cancer Cells

Antibacterial Activity:

Microorganism	Ampicillin	Vancomycin	Streptomycin	Ciprofloxacin	Chloramphenicol
E.coli	0 mm	8 mm	20.5 mm	7 mm	26 mm
S.aureus	12 mm	20 mm	22 mm	23 mm	28 mm
B.subtilis	11 mm	23 mm	20 mm	25 mm	27.5 mm
K.pneumoniae	0 mm	12.5 mm	23.5 mm	11 mm	25 mm

Fig: Antimicrobial activity of D. denudatum against pathogenic bacteria.

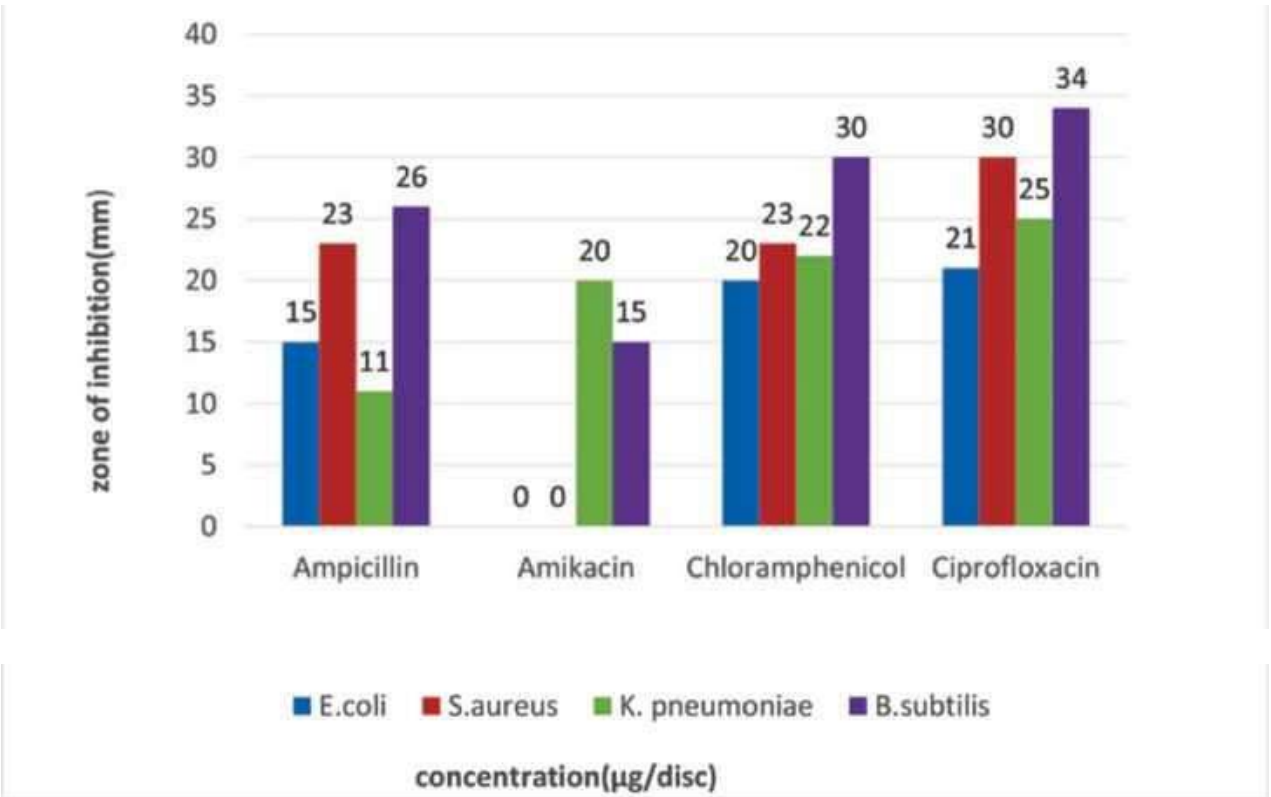


Fig: Antibacterial Activity of Standard Drugs

Antioxidant Assay:

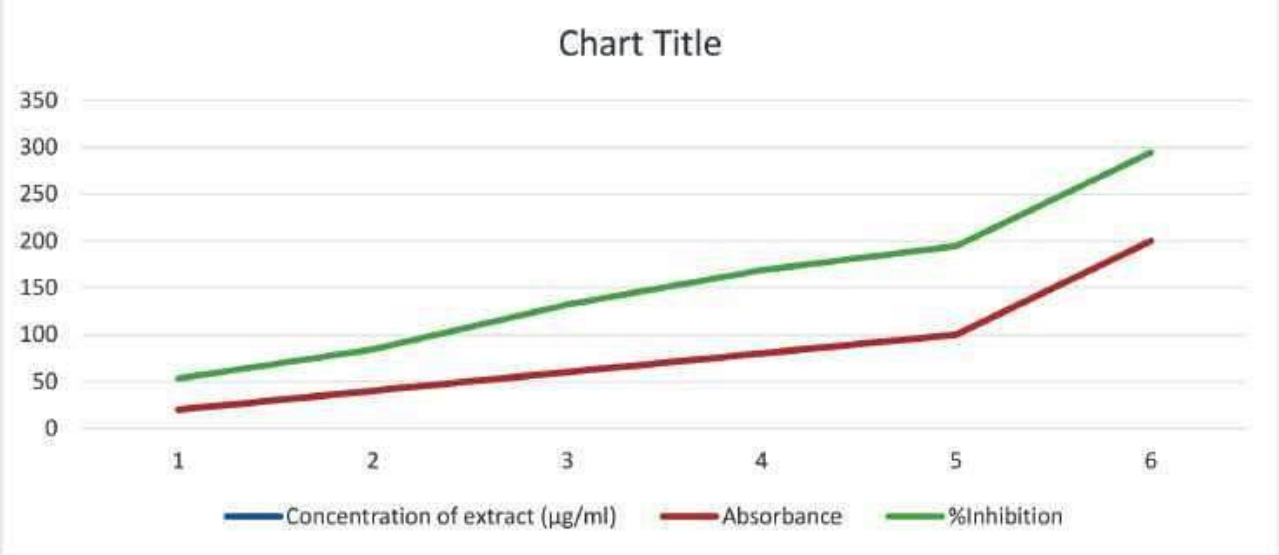


Figure: DPPH radical scavenging activity of Ascorbic acid and ethanolic extract of D. denudatum. Methanolic extract of has shown moderate antioxidant activity in comparison to standard ascorbic acid (Red), due to the presence of high quinone and other phenolic contents.

Anticancer Activity (MTT Assay)

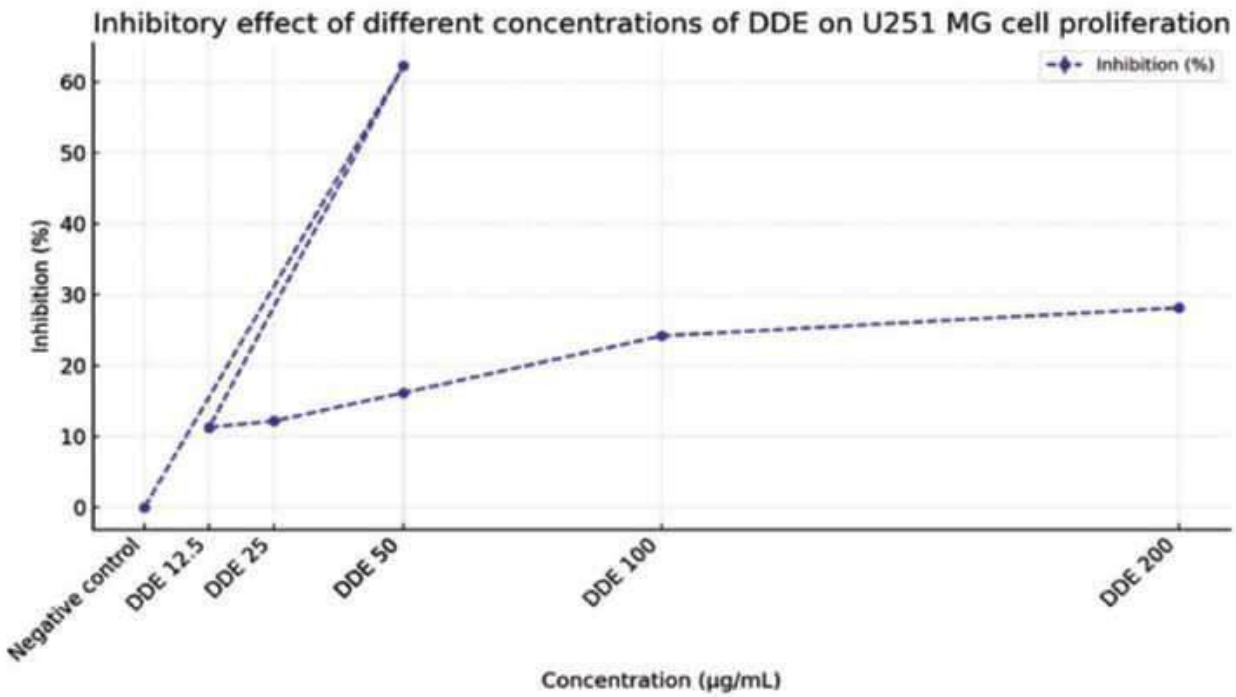


Fig: The estimated IC50 value for the methanolic extract of Delphinium denudatum is approximately 752.02 µg/mL.

Conclusions:

In conclusion, the results of this study demonstrate that the extract of Delphinium denudatum Wall. exhibits a dosage-dependent reduction in cell viability, indicating its potential anti-cancer activity. While no comparable research is available in the literature, the observed effects suggest possible mechanisms such as apoptosis induction and cell cycle arrest. However, the in vitro nature of the study presents a limitation, as these findings require in vivo validation to confirm their therapeutic potential. The key finding of this research is that D. denudatum extract shows promising anti-cancer properties, which may pave the way for the development of a novel therapeutic agent. Future research should focus on further elucidating the mechanisms underlying these effects and conducting in vivo studies to assess the full potential of D. denudatum as an anti-cancer agent.

Survey Research

1. Knowledge, Attitude, and Practice among Health Workers towards Ano-rectal Diseases in Sudurpashchim Province, Nepal

Ano-rectal diseases encompass a range of conditions affecting the anus and rectum, including hemorrhoids, anal fissures, fistulas, and cancers. These diseases can significantly impact patients' quality of life, causing pain, discomfort, and emotional distress. In regions with limited healthcare resources, such as Sudurpashchim Province, Nepal, the effective management of these conditions relies heavily on the knowledge, attitudes, and practices (KAP) of health workers. Understanding the KAP of health workers is crucial for improving the diagnosis, treatment, and management of ano-rectal diseases. Identifying gaps in knowledge, assess attitudes, and document practices among health workers in Sudurpashchim Province. The findings will inform targeted interventions to enhance healthcare delivery and patient outcomes in this region.

Primary Objective

- To evaluate the knowledge, attitudes, and practices of health workers regarding ano-rectal diseases in Sudurpashchim Province, Nepal.

Secondary Objectives

- To identify factors influencing the KAP of health workers.
- To suggest potential interventions to improve KAP and healthcare outcomes.

Expected Outcomes

- Knowledge Level: Insight into the current knowledge of health workers regarding ano-rectal diseases.
- Attitude Assessment: Understanding the attitude of health workers towards these diseases.
- Practice Patterns: Identifying current practices and gaps in practice.

Implications

- Policy Making: Informing policymakers to design targeted interventions.
- Training Programs: Development of training programs to improve KAP among health workers.
- Public Health:Enhancing public health outcomes through better management of ano-rectal diseases.

Published Research papers

i. The Prevalence of Anorectal Disorders among Residents of Kirtipur Municipality in Nepal

The Prevalence of Anorectal Disorders among Residents of Kirtipur Municipality in Nepal

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Abstract

Background: Epidemiological knowledge is very poor in regards to anorectal disorders. The patients do not often discuss perianal symptoms leading to late diagnosis and treatment. There is a need of doing systematic questioning and clinical evaluation of the population to assess the prevalence of anorectal disorders.

Aim and objectives: The aim of this study is to assess the prevalence of anorectal disorders among the residents of Kirtipur municipality in Nepal.

Methods: The first section was the cross-sectional survey to assess the demographic and lifestyle characteristics of the study population. The second section was the observation study to assess the prevalence of anorectal symptoms. 1483 patients were recruited from 10 wards of Kirtipur municipality. We analyzed the comparison of diagnostic approach between patients with perianal symptoms spontaneously visited and those revealed after targeted questioning. We further analyzed the reason for not performing perianal examination by both patients and general practitioners. Factors associated with referral to a proctologist and diagnosis rate were also evaluated.

Results: The study showed that the prevalence of anorectal symptoms increased from 9.4% to 21.2% after systematic targeted questioning by general practitioners. Spice intake was the only covariate associated with decrease risk of proctological symptoms. Haemorrhoids (31.2%) and anal fissure (28.7%) were the most prevalent anorectal disorders. However, physicians have diagnosed anorectal disorders in 20.2% of patients without performing any perianal examination. Diagnosis of haemorrhoids and fistula in ano were significantly associated with referral to a proctologist.

Conclusion: This study may contribute to epidemiological knowledge about the prevalence of anorectal disorders among Nepalese population.

Keywords: Anorectal disorders; Prevalence; Nepal

Abbrevations

NARTC: National Ayurveda Research and Training Center; CI: Confidence Interval; OR: Odds Ratio; SPSS: Statistical Package for Social Sciences; ENT: Ear: Nose and Throat; VDC: Village Development Committee.

Background

Anorectal disorders are one of the most common reluctant disorders and affect about one-fourth of the population [1]. Anorectal disorders are either structural or functional abnormalities of the pelvic floor in patients with symptoms, such as difficulty in defecation, fecal incontinence, rectal bleeding, anorectal pain, and rectal prolapse [2,3]. Anorectal disorders include benign conditions such as haemorrhoids to severe conditions such as anorectal cancers. The most common anorectal disorders are haemorrhoids, anal fissures, anorectal abscesses and fistulae, fecal incontinence and pruritus ani. A careful history taking of presenting symptoms, visual inspections, digital rectal examinations along with relevant tests help in diagnosis of anorectal disorders [4].

ii. Effect of Gymnema sylvestre (Gurmar) in Patients Diagnosed with Type 2 Diabetes mellitus in Kathmandu Valley

Int J Ayu Pharm Chem
ISSN 2350-0204 www.ijapc.com

ORIGINAL RESEARCH ARTICLE

Effect of *Gymnema sylvestre* (Gurmar) in Patients Diagnosed with Type 2 Diabetes mellitus in Kathmandu Valley

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ABSTRACT

Introduction:
Diabetes mellitus is a growing public health concern in the Southeast Asia region (SEAR) , where more than 87.6 million people are living with diabetes. *Gymnema sylvestre* (Gurmar) , a medicinal herb, is commonly used as herbal medicine to treat diabetes.

Objectives:
The present study was aimed to examine the effect of *Gymnema sylvestre* (*G. sylvestre*) among patients diagnosed with Type 2 Diabetes mellitus (T2DM) in Nepal.

Materials and Methods: The present study was an open-label uncontrolled clinical trial. Eligible participants were patients aged 30 to 60 years and diagnosed with T2DM. A total of 43 eligible participants were supplemented with 6 gm of *G. sylvestre*, daily for 4 weeks during the study period. Anthropometric and biochemical variables were evaluated by comparing data at baseline and at 4 weeks after starting treatment using chi-square and student's *t*- test.

Results:
There was a decrease in the fasting and post-prandial glucose levels of the participants by 19.3% and 16.7%, after treatment with *G. sylvestre*, respectively. There were no significant changes observed in other clinical variables before and after treatment with *G sylvestre*.

Conclusion:
This study suggests that the use of *G sylvestre* leaf has a potential hypoglycemic action in patients with T2DM. However, further studies are needed to confirm the beneficial effect of *G sylvestre* in T2DM.

Key Words: *Gymnema sylvestre , Type 2 Diabetes mellitus , Nepal*

INTRODUCTION

Diabetes mellitus is a growing public health concern in the Southeast Asia region (SEAR), where more than 87.6 million people are living with diabetes[1]. South Asians are known to have an increased predisposition for Type 2 Diabetes

iii. Efficacy of Ayurvedic herbal formulation and Ayurvedic herbo-mineral formulation in hypothyroidism patients

Journal of Ayurvedic and Herbal Medicine 2021; 7(4): 237-246

Research Article

ISSN: 2454-5023
J. Ayu. Herb. Med.
2021; 7(4): 237-246
Received: 12-09-2021
Accepted: 13-11-2021

www.ayurvedjournal.com
DOI: 10.31254/jahm.2021.7405

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Efficacy of Ayurvedic herbal formulation and Ayurvedic herbo-mineral formulation in hypothyroidism patients

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ABSTRACT

Background: Hypothyroidism is one of the major endrocrine disorders seen in general population worldwide. Although modern drugs are quite effective in managing hypothyroidism, it is subject to sustaining certain side effects. So, we aim to evaluate the efficacy of Ayurvedic herbal formulation and Ayurvedic herbo-mineral formulation in managing hypothyroidism in Nepalese population. **Methods and analysis:** This study was a randomized, double-blind, and controlled trial. A total of 50 participants with the diagnosis of hypothyroidism was randomly assigned to the intervention group or control group in a ratio of 1:1 for 4 weeks. The primary outcome measure was the thyroid-stimulating hormone level, and secondary outcome measures was the change in body mass index, waist-hip ratio, blood glucose level, lipid profile, liver function tests and renal function tests between the baseline and at 4 weeks after intervention. Statistical analysis was done by comparing categorical variables using chi-square test and Fisher's exact test and comparing continuous variables using paired and unpaired student's *t* test. **Results:** There was a decrease in TSH levels of the participants by 12.5% and 7.9%, after intervention with AHF and AHMF, respectively. There were a small statistical significant difference only in waist-hip ratio (p= 0.04) when compared before and after treatment with AHF and AHMF whereas there was no significant changes observed in other clinical variables after intervention with AHF and AHMF. **Conclusion:** This study may provide new evidence for the effectiveness of Ayurvedic herbal formulation and Ayurvedic herbo-mineral formulation in hypothyroidism in context of Nepal.

Keywords: Ayurvedic herbal formulation, Ayurvedic herbo-mineral formulation, Hypothyroidism, Nepal.

INTRODUCTION

Hypothyroidism is one of the major endocrine disorders seen in general population worldwide. It occurs due to the deficiency of thyroid hormones and leads to the reduction of basal metabolic rate, affect physical and mental growth during infancy or childhood [1]. The prevalence of hypothyroidism in the developed world and Nepal is 4.6% and 13%, respectively [2-4].

Thyroxine (T4) and tri-iodothyronine (T3) are the two hormones secreted by the thyroid gland for maintenance of body homeostasis. Disorders of the thyroid gland can stimulate the overproduction of thyroid hormones or cause glandular destruction and hormone deficiency. Hypothyroidism is defined as reduced production of thyroid hormones [5]. The causes of hypothyroidism are usually divided primary, secondary and tertiary hypothyroidism. The permanent loss or destruction of the thyroid by autoimmune diseases, irradiation injury etc. is called peripheral or primary hypothyroidism, which is the cause of approximately 99% of cases of hypothyroidism. Insufficient stimulation of the normal thyroid gland as a result of hypothalamic and pituitary defects in the thyroid stimulating hormone (TSH) molecule is described as central or secondary and tertiary hypothyroidism, respectively and is accounted for less than 1% of all cases throughout the world [6-8]. The common signs and symptoms of hypothyroidism are fatigue, lethargy, constipation, cold intolerance, weight gain, hoarse voice, pale and dry skin, brittle fingernails and hair, a puffy face, an elevated blood cholesterol level, muscle aches, tenderness, stiffness and weakness, pain, stiffness of swelling in the joints, heavier than normal menstrual periods, and depression. Hypothyroidism in infants and teenagers may result in poor growth and mental development as well as delayed development of permanent teeth and puberty [7]. Diagnosis of categories of hypothyroidism is based on an appropriate laboratory evaluation. TSH assays is preferred as the primary test to establish the diagnosis of primary hypothyroidism whereas free thyroxine (fT4) or total thyroxine are more important measures for the diagnosis of secondary or tertiary hypothyroidism. In addition to these tests, thyroid peroxidase (TPO) antibodies (TPOAbs), thyroglobulin antibodies, thyroid scans, and ultrasonography may be included to diagnosis the cause of hypothyroidism. In primary abnormality of thyroid function, serum TSH is elevated with normal serum fT4. Autoimmune thyroid disease is detected mostly by measuring circulating antibodies against TPO. Autoimmune process gradually reduces the thyroid function, and there is a compensation phase when the normal thyroid hormone levels are maintained

C. TRAINING ACTIVITIES

Training and Certificate Distribution

NARTC successfully completed its training programs for the year 2080/81. It provided various training sessions for government executives, Ayurveda consultants, medical officers, and paramedics from both government and non-government sectors across all seven provinces of Nepal. The training included a stress management workshop for government executives and a session on anorectal diseases and Kshar-Sutra treatment for Ayurveda medical officers. Additionally, Ayurveda health workers and volunteers received training on Basic Panchakarma and Kshar-Sutra at NARTC. NARTC also organized 11 awareness programs, benefiting a total of 261 participants among which 203 were male and 58 were female. These training sessions took place on different dates throughout the year. Details of the training activities are provided below.

Event I:
Basic training workshop on panchakarma chikitsa for Ayurveda Paramedics

NARTC conducted training workshop on Panchakarma Chikitsa. The purpose of the training workshop was to upgrade the knowledge and skills of the participants in the overall management of diseases by panchakarma chikitsa. The training was conducted on 2080/06/09-06/11 at training hall of NARTC in Kirtipur. The course was targeted to ayurvedic health professionals namely for ayurveda paramedics, kabiraj and vaidyas who were interested to upgrade their knowledge and skills in clinical practice by panchakarma chikitsa. 25 participants attended the training. Participants were mostly from both government and non-government sectors. Hon. Mohan Basnet was the chief guest. Pro. Dr. DL Bharkher and Chairman Pro. Dr. DB Rokka were also present on the occasion.

Event II:
Training and Workshop on Clinical Application of Marma Therapy

NARTC conducted the training for 3 days on 2080/06/15-06/17 where 27 Ayurveda paramedics were trained during the workshop. The

participants were selected from 7 provinces of Nepal. The purpose of the training was to apprise the participants with basic application of Marma Chikitsa. The training was conducted to enhance the knowledge and skill of the participants for the dissemination of Marma Chikitsa therapy throughout various ayurveda institutions. The event was chaired by Pro. Dr. DB Rokka and Prof. Dr. DL Bharkher.

Event III:
Basic Training and Workshop on Diagnosis and management of anorectal disease

NARTC conducted training workshop on Management of anorectal diseases by Kshar Sutra. The purpose of the training workshop was to upgrade the knowledge and skills of the participants in the overall management of anorectal diseases by Kshar Sutra. The training was conducted on 2080/09/05- 09/07 at training hall of NARTC in Kirtipur. The course was targeted to enhance the practical knowledge and skills of the participants on anorectal diseases and their management by Kshar Sutra. A total of 22 trainees participated in the workshop. The event was chaired by Prof. Dr. DL Bharkher. Chief Guest for the event was Assoc prof. Dr. Shiv Mangal Prasad.

Event IV:
Basic Training and Workshop on Diagnosis and management of anorectal disease

NARTC conducted training workshop on Management of anorectal diseases by Kshar Sutra. The purpose of the training workshop was to upgrade the knowledge and skills of the participants in the overall management of anorectal diseases by Kshar Sutra. The training was conducted on 2080/09/25- 09/27 at training hall of NARTC in Kirtipur. The course was targeted to enhance the theoretical knowledge of the participants on anorectal diseases and Kshar Sutra and to upgrade the practical knowledge and skills of the participants on anorectal diseases and their management by Kshar Sutra. A total of 30 trainees participated in the workshop. The event was chaired by Prof. Dr. DL Bharkher. Chief Guest for the event was Dr. Sarita Shrestha.

Event V:
Training and Workshop on Clinical Application of Marma Therapy

NARTC conducted the training for 3 days on 2080/10/10-10/12 where 22 Ayurveda paramedics were trained during the workshop. The participants were selected from 7 provinces of Nepal. The purpose of the training was to apprise the participants with basic application of Marma Chikitsa. The training was conducted to enhance the knowledge and skill of the participants for the dissemination of Marma Chikitsa therapy throughout various ayurveda institutions. The event was chaired by Prof. Dr. DL Bharkher and Assoc prof. Dr. Shiv Mangal Prasad was also present as the guest.

Event VI:
Training and Workshop on Agni/biddhakarma and Pain Management

NARTC hosted a workshop on Agni/biddhakarma and pain management for ayurveda doctors. The workshop was conducted by Prof. Dr. Mahesh Sanghavi from India and Dr. Chandra kumar Deshmukh on 2080/10/17-10/19. Welcome speech and short briefing about the program were given by Dr. Ram Adhar Yadav, the Executive Director of NARTC. Dr. Dhanik Lal Bharkher also attended the event. The program centered around the effective management of pain and stress in individuals.

Event VII:
Training and Workshop on Urological Disorders and its management through ayurveda

NARTC hosted a workshop on Urological Disorders and its management through ayurveda for ayurveda doctors. The workshop was conducted by Prof. Dr. DL Bharkher. from India. Welcome speech and short briefing about the program were given by Dr. Ram Adhar Yadav, the Executive Director of NARTC. Dr. Dhanik Lal Bharkher also attended the event. The program centered around the effective management of Urological Disorders and its management through ayurveda.

Event VIII:
Training and Workshop on Clinical Application of Marma Therapy

NARTC conducted the training for 3 days on 2080/11/29-12/01 where 22 Ayurveda paramedics were trained during the workshop. The participants were selected from 7 provinces of Nepal. The purpose of the training was to apprise the participants with basic application of Marma Chikitsa. The training was conducted to enhance the knowledge and skill of the participants for the dissemination of Marma Chikitsa therapy throughout various ayurveda institutions. The event was chaired by Prof. Dr. DL Bharkher and Dr. Pramod Bhatta Prasad was also present as the guest.

Event IX:
Basic Training and Workshop on Diagnosis and management of anorectal disease

NARTC conducted training workshop on Management of anorectal diseases by Kshar Sutra. The purpose of the training workshop was to upgrade the knowledge and skills of the participants in the overall management of anorectal diseases by Kshar Sutra. The training was conducted on 2080/12/21-12/23 at training hall of NARTC in Kirtipur. The course was targeted to upgrade the practical knowledge and skills of the participants on anorectal diseases and their management by Kshar Sutra. A total of 23 trainees participated in the workshop. The workshop was conducted by Prof. Dr. KK Sijoriya from India along with Assoc Prof. Dr. Binod Kumar Singh. Assoc prof. Dr. Shiv Mangal Prasad was also present as the guest.

Event X:
Training and Workshop on Trauma Care, Basic Life support, Disaster Management and sound healing therapy

NARTC hosted a workshop on basic life support during emergency management on 2081/02/02-02/04. The event was chaired by Prof. Dr. DL Bharkher. Welcome speech and short briefing about the program were given by Dr. Ram Adhar Yadav, the Executive Director

of NARTC chief guest, Prof. Dr. Pradip Vaidya, Assiatant Dean, IOM, TU attended the workshop. The program centered around the effective management of pain and stress in individuals. The focus of the program was on emergency management of first aid including, Airway, breathing and circulation. It provided a great opportunity for healthcare professionals to learn more about emergency care. A total of 30 Ayurveda doctors participated in the training session.

Event XI:
Training and Workshop on Clinical Application of Marma Therapy along with residential stress management for executive personnels

NARTC conducted the training for 3 days on 2081/02/32-03/02 where 17 Ayurveda paramedics were trained during the workshop. The participants were selected from 7 provinces of Nepal. The purpose of the training was to apprise the participants with basic application of Marma Chikitsa. The training was conducted to enhance the knowledge and skill of the participants for the dissemination of Marma Chikitsa therapy throughout various ayurveda institutions. Along with this, workshop on stress management for executive personnels was also conducted.

Event XII:
One Day Health Camp at Siraha

NARTC, with cooperation from Mirchaiya Municipality, Siraha, conducted an impactful one-day Health camp, Free Drug distribution and consultation program at Mohan Madhyamik Vidyalaya, Mirchaiya, Ward Number 05. This event was supported and coordinated by Mirchaiya Municipality. More than 900 patients benefited from the event. The event was conducted on 2080/07/18 BS.

Event XIII:
One Day Health Camp at Kalyanpur-04 Dadaul, Siraha

NARTC conducted an impactful one-day Health camp, Free Drug distribution and consultation program at Darol, Kalyanpur

Municipality, Siraha. This event, under the leadership of Dr. Ram Adhar Yadav, the Executive Director of NARTC, aimed at addressing the pressing healthcare needs of the local population. Mr. Ram Pukar Shah, the Mayor of Kalyanpur Municipality was the chief guest for the event. More than 600 patients benefited from the event. The event was conducted on Friday, 2080/08/12 BS.

Event XIV:
One day Health camp at Jalbire, Sindhupalchowk

NARTC, with support and cooperation from Jugal sindhu Utthan Samaj, Sindhupalchok, conducted an impactful one-day Health camp, Free Drug distribution and consultation program at Shree Anand Secondary School is located in Jalbire, Balefi Rural Municipality Ward No. 1. More than 500 patients benefited from the event. The event was conducted on Friday, 2080/08/23 BS.

Event XIV:
One Day Health Camp at Indreshswori Madhyamik Vidyalaya, Melamchi, Sindhupalchowk

NARTC conducted an impactful one-day Health camp, Free Drug distribution and consultation program at Indreshswori Madhyamik Vidyalaya, Melamchi-05 sindhupalchowk. This event, under the leadership of Dr. Ram Adhar Yadav, the Executive Director of NARTC, aimed at addressing the pressing healthcare needs of the local population. The event welcomed and helped people with different health concerns. More than 400 patients benefited from the event. The event was conducted on 2080/09/14 BS.

Event XV:
One day Health camp at Namobuddha, Kavre

NARTC, with cooperation from Namobuddha Municipality and Dapcha Ausadhalaya conducted an impactful one-day Health camp, Free Drug distribution and consultation program at at Kaliganga Aa. Bi., Namobuddha-06, Kavre. The event welcomed and helped people with various health issues with over 550 participants receiving healthcare needs. It took place on Friday, 2081/02/26 BS.