

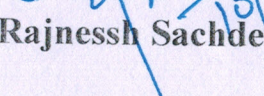
Supporting Documents- Food Science & Technology

- 1) List of Students Undertaking Field Projects / Research Projects / Internship Program**
- 2) Completion Certificates**
- 3) Copy of Project Reports**



**List of Students Undertaking List of Students Undertaking Field Projects / Research Projects / Internships
(M.Sc. Food Technology) Batch 2019-2021**

Sr. No.	Program	University Roll No	Name of the Student	Project Report Title	Online Training
1.	M.Sc. Food Technology	1930311	Abhishek Pandey	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
2.	M.Sc. Food Technology	1930312	Akshay Kumar Pandey	Food Processing Technology Advance & Application	Indian Institute of Food Processing Technology
3.	M.Sc. Food Technology	1930313	Alisha Ahuja	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
4.	M.Sc. Food Technology	1930314	Alisha Nandan	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
5.	M.Sc. Food Technology	1930315	Ananya Sharma	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
6.	M.Sc. Food Technology	1930317	Bavneet Kaur	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
7.	M.Sc. Food Technology	1930318	Drishti	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
8.	M.Sc. Food Technology	1930319	Himanshu Saini	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
9.	M.Sc. Food Technology	1930320	Komal	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
10.	M.Sc. Food Technology	1930321	Mohit Kumar	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
11.	M.Sc. Food Technology	1930322	Payal Chauhan	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
12.	M.Sc. Food Technology	1930324	Rashmi Kumari	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
13.	M.Sc. Food Technology	1930325	Robin Varghese	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
14.	M.Sc. Food Technology	1930326	Saloni	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)
15.	M.Sc. Food Technology	1930328	Vandana	"Food and Beverage Management"	Department of Marketing BOCCONI University Italy (Coursera)


 Head
 Deptt. of Food Science & Technology
 I.K. Gujral Punjab Technical University
 KAPURTHALA

Dr. Rajnesh Sachdev (DFST)

Annexure DFST
1-3-4-

List of Students Undertaking Field Projects / Research Projects / Internships (M.Sc. Clinical Research) Batch 2019-2021

Sr. No.	Program	University Roll No	Name of the Student	Project Report Title	Place of Field Projects / Research Projects Training
1.	M.Sc. Clinical Research	1930257	Akanksha Sharma	To evaluate the place of CAM therapies in Clinical Research with respect to prevailing standardized citation metrics author data base	Baba Farid University of Health Science, Faridkot, Punjab
2.	M.Sc. Clinical Research	1930258	Ankita	Prescription pattern analysis of antimicrobials using WHO prescribing indicators in tertiary care teaching hospital	PIMS Medical & Education Chartable Society
3.	M.Sc. Clinical Research	1930259	Avtar Singh	A Survey to analyze unwanted effect of Covishield and Covaxin	Community Health Center Fattu DHINGA , Kapurthala
4.	M.Sc. Clinical Research	1930260	Gagandeep Singh	Determination of anti-diabetic medication adherence among type-II diabetic patients"	Civil Hospital Jalandhar
5.	M.Sc. Clinical Research	1930261	Lakshmi	"To Study the impact of celiac disease diagnosis on the caregivers of the celiac disease patients"	Baba Farid University of Health Science, Faridkot, Punjab
6.	M.Sc. Clinical Research	1930262	Mehtab Singh	Prescription pattern analysis of Proton pump inhibitors using WHO prescribing indicators in tertiary care teaching hospital	PIMS Medical & Education Chartable Society
7.	M.Sc. Clinical Research	1930263	Munish Kumar	"To Study Compliance level of Beer's Criteria in prescription pattern of geriatric patients at tertiary care hospital in urology department"	Baba Farid University of Health Science, Faridkot, Punjab
8.	M.Sc. Clinical Research	1930264	Nikhil	Knowledge, Attitude and Practice of Pharmacovigilance Activates By Health Care Professional	Private Health Facilities Jalandhar
9.	M.Sc. Clinical Research	1930265	Priya Chauhan	Study of Changes in prescription patterns of antihypertensive drugs and adherence of JNC guidelines over a decade	PIMS Medical & Education Chartable Society
10.	M.Sc. Clinical Research	1930266	Simaranjeet Kaur	A Pattern and Rationality analysis of fixed dose combination prescribe in teaching hospital	PIMS Medical & Education Chartable Society

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Dr. Rajnesh Sachdev (DFST)

AMEYARE-1-34-

List of Students Undertaking List of Students Undertaking Field Projects / Research Projects / Internships (M. Tech. Food Technology) Batch 2019-2021

Sr. No.	Program	University Roll No	Name of the Student	Project Report Title	Place of Training
1.	M. Tech. Food Technology	1916691	Amy Masih	Watermelon-proximate composition, polyphenol and their antioxidant activity	Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala
2.	M. Tech. Food Technology	1916692	Anmol Dhillon	Study the Drying Characteristics Functional Properties and Antioxidant Properties of florets of banana inflorescence	Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala
3.	M. Tech. Food Technology	1916694	Manpreet Kaur	Muskmelon-Proximate composition, polyphenols and their anti-oxidant activity	Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala
4.	M. Tech. Food Technology	1916695	Monika Thakur	Development of a defined fermentation protocol for rice based alcoholic beverage	Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala
5.	M. Tech. Food Technology	1916696	Vani Jaychandran	Green Tea for weight Loss and Weight Management; Scientific Evidence , marketing and Consumer Perception	Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

10/09/21
Dr. Rajnesh Sachdev (DFST)



University Center of Excellence in Research
Baba Farid University of Health Sciences, Faridkot, Punjab

E-mail: ucer_bfuhs@rediffmail.com

Phone: 01639-256252 Fax: 01639-256234

BFUHS/UCER/2021/No. 3446

Dated: 16/7/21


To Whom It May Concern

This is certified that Ms. Akanksha Sharma has completed her four months Short term training Programme at University Center of Excellence in Research, BFUHS, Faridkot from February 16, 2021 to June 15, 2021. She has successfully completed her training and has completed her research work on the project entitled "To evaluate the place of CAM therapies in clinical research with respect to prevailing standardized citation metrics author database". During her tenure, she has always actively participated in various research activities and has shown a keen interest. She can accomplish all her tasks in a courteous and timely manner with all her hard work, follow up and team work. Her conduct during her tenure was excellent and she proved to be an able student and a hardworking trainee.

Our team wishes her good luck and best wishes for her future endeavors.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

21/7/21


(Dr. Parveen Bansal)
Joint Director
Joint Director
University Centre of Excellence
in Research, BFUHS, Faridkot

Ref. No. PIMS/MS/21/ 1094

Dated: 12/7/2021


TO WHOM IT MAY CONCERN

This is to certify that Ms. Ankita, D/o Sh. Vinay Sharda, M.Sc. Clinical Research student, Registration No. 1930258 of I.K. Gujral Punjab Technical University, Kapurthala, Main Campus, has undergone practical training in Punjab Institute of Medical Sciences (Hospital and Medical College) from 15.02.2021 to 14.06.2021.

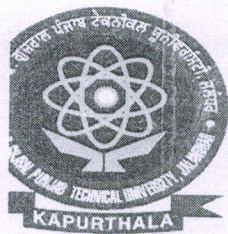
During this period she had carried out the research work under supervision of HOD Pharmacology Department and her performance was good. We wish her all the best for future endeavours.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA




Medical Superintendent
PIMS, Jalandhar

Medical Superintendent
Punjab Institute of Medical Sciences
Garha Road, Jalandhar



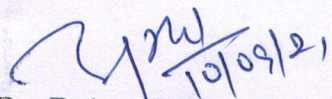
ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਕਪੂਰਥਲਾ, ਮੇਨ ਕੈਂਪਸ.
I.K. Gujral Punjab Technical University, Kapurthala, Main Campus.
Estd. Under Punjab Technical University Act, 1997

Ref.No. IKA.PTU/PTU/D-408

Dated. 10/9/2021

This is to certify that Avtar Singh a student of M.Sc. Clinical Research bearing Roll No 1930259 carried out research project, "A Survey to analyze unwanted effect of Covishield and Covaxin" at Community Health Centre Fattu Dhinga, Kapurthala from February 2021 to July 2021. He has submitted the report of research project.

His performance during the training was satisfactory. We wish him all the best for further endeavours.


Dr. Rajneesh Sachdev
Head (Department of Food Science & Technology)
I.K. Gujral Punjab Technical University
Main Campus
Kapurthala

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Deputy Director cum Medical Superintendent
Civil Hospital Jalandhar
Tel Phone No. 0181-2230933
Email: mschjal@yahoo.com

No.

15618

Date 18/8/2021

TO WHOM IT MAY CONCERN

This is to certify that Mr. Gagandeep Singh S/O Sh. Harpal Singh, M.Sc. Clinical Research Student, Registration No. 1930260 of I.K.Gujral Punjab Technical University, Kapurthala, Main Campus has done his Research work in District Civil Hospital Jalandhar. He had collected the data of type II diabetic patients in medicine OPD for his thesis work "Determination of anti-diabetic medication adherence among type II diabetic patients" from 17/03/2021 to 16/08/2021.

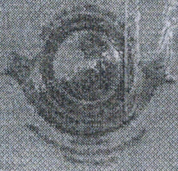
During this period he carried out the research under DNB Coordinator, Dr. Satinderjit Singh Bajaj (SMO) and his performance was good. We wish him all the best for future endeavors.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

2
10/8/21

Medical Superintendent
Civil Hospital Jalandhar
Medical Superintendent
Civil Hospital Jalandhar

18/8/21
M.B.B.S.; P.C.M.S-I
M.O./Medical Specialist
Civil Hospital, Jalandhar



University Center of Excellence in Research
Baba Farid University of Health Sciences, Faridkot, Punjab

E-mail: ucer_bfuh@rediffmail.com

Phone: 01639-256252 Fax: 01639-256234

BFUHS/UCER/2021/No. 3447

Dated: 18/07/21

To Whom It May Concern

This is certified that Ms. Lakshmi has completed her four months Short term training Programme at University Center of Excellence in Research, BFUHS, Faridkot from February 16, 2021 to June 15, 2021. She has successfully completed her training and has completed her research work on the project entitled "To study the impact of celiac disease diagnosis on the caregivers of the celiac disease patients". During her tenure, she has always actively participated in various research activities and has shown a keen interest. She can accomplish all her tasks in a courteous and timely manner with all her hard work, follow up and team work. Her conduct during her tenure was excellent and she proved to be an able student and a hard working trainee.

Our team wishes her good luck and best wishes for her future endeavors.

Head
 Deptt. of Food Science & Technology
 I.K. Gujral Punjab Technical University
 KAPURTHALA

2/10/21

(Dr. Parveen Bhatia)
 Joint Director

Joint Director
 University Centre of Excellence
 in Research, BFUHS, Faridkot



PIMS Medical & Education Charitable Society

Guchind Road, Jalandhar (Punjab) 148001 India. Ph: 0181-4566221 Mobile: +91 981-2491736 Email: pims@pims.org

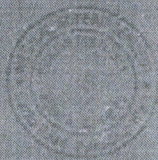
Ref. No. PIMS/AIS/21/1097

Date: 12/7/2021

TO WHOM IT MAY CONCERN

This is to certify that Mr. Mehtab Singh, S/o Sh. Randhir Singh, M.Sc. Clinical Research student, Registration No. 1930262 of I.K. Gujral Punjab Technical University, Kapurthala, Main Campus, has undergone practical training in Punjab Institute of Medical Sciences (Hospital and Medical College) from 15.02.2021 to 14.06.2021.

During this period he had carried out the research work under the supervision of HOD Pharmacology Department and his performance was good. We wish him all the best for future endeavours.



Medical Superintendent
PIMS, Jalandhar

Medical Superintendent
Punjab Institute of Medical Sciences
Guchind Road, Jalandhar

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

2/15/21



University Center of Excellence in Research
Baba Farid University of Health Sciences, Faridkot, Punjab

E-mail: ucer_bfuhs@rediffmail.com

Phone: 01639-256252 Fax: 01639-256234

BFUHS/UCER/2021/No. 3448

Dated: 16/07/21

To Whom It May Concern

This is certified that **Mr. Munish Kumar** has completed his four months Short term training Programme at University Center of Excellence in Research, BFUHS, Faridkot from February 16, 2021 to June 15, 2021. He has successfully completed his training and has completed his research work on the project entitled "To study compliance level of Beer's Criteria in prescription pattern of geriatric patients at tertiary care hospital in urology department". During his tenure, he has always actively participated in various research activities and has shown a keen interest. He can accomplish all his tasks in a courteous and timely manner with all his hard work, follow up and team work. His conduct during his tenure was excellent and he proved to be an able student and a hardworking trainee.

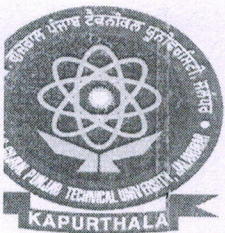
Our team wishes his good luck and best wishes for his future endeavors.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

22/07/21

(Dr. Parveen Bansal)
Joint Director

Joint Director
University Centre of Excellence
in Research, BFUHS, Faridkot



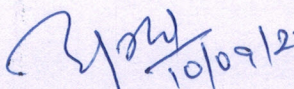
ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਕਪੂਰਥਲਾ, ਮੇਨ ਕੈਂਪਸ.
I.K. Gujral Punjab Technical University, Kapurthala, Main Campus.
Estd. Under Punjab Technical University Act, 1997

Ref.No. I.K.G.P.T.U./ST/D-406

Dated..10/9/2021

This is to certify that Nikhil a student of M.Sc. Clinical Research bearing Roll No 1930264 carried out research project, "Knowledge, Attitude and Practice of Pharmacovigilance Activates by Health Care Professional" at Private Health Facilities Jalandhar from February 2021 to July 2021. He has submitted the report of research project.

His performance during the training was satisfactory. We wish him all the best for further endeavours.


Dr. Rajneesh Sachdev
Head (Department of Food Science & Technology)
I.K.Gujral Punjab Technical University
Main Campus
Kapurthala

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

P-8



PIMS Medical & Education Charitable Society

Garha Road, Jalandhar (Punjab) 144006 India. Ph.: 0181-6606000 Telefax: +91-181-2480736 / contact@pims.com

Ref. No. PIMS/MS/21/ 1095

Dated: 12/7/2021

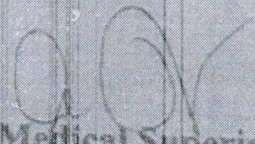
TO WHOM IT MAY CONCERN

This is to certify that Ms. Priya Chauhan, D/o Sh. Rakesh Kumar M.Sc. Clinical Research student, Registration No. 1930265 of I.K. Gujral Punjab Technical University, Kapurthala, Main Campus, has undergone practical training in Punjab Institute of Medical Sciences (Hospital and Medical College) from 15.02.2021 to 14.06.2021.

During this period she had carried out the research work under the supervision of HOD Pharmacology Department and her performance was good. We wish her all the best for future endeavours.



21/7/2021


Medical Superintendent
PIMS, Jalandhar

Medical Superintendent
Punjab Institute of Medical Sciences
Garha Road, Jalandhar

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

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Society Registration # 4004/2008 / www.pims.com

P-9



PIMS Medical & Education Charitable Society

Garha Road, Jalandhar (Punjab) 144006 India Ph: 0181-6606000 Telefax: +91 181 2407736 / contact@pimsj.com

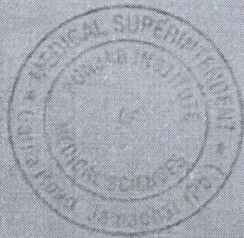
Ref. No. PIMS/MS/21/ 1096

Dated: 12/7/2021

TO WHOM IT MAY CONCERN

This is to certify that Ms. Simranjeet Kaur, D/o Sh. Harpal Singh, M.Sc. Clinical Research student, Registration No. 1930266 of I.K. Gujral Punjab Technical University, Kapurthala, Main Campus, has undergone practical training in Punjab Institute of Medical Sciences (Hospital and Medical College) from 15.02.2021 to 14.06.2021.

During this period she had carried out the research work under the supervision of HOD Pharmacology Department and her performance was good. We wish her all the best for future endeavours.



Medical Superintendent
PIMS, Jalandhar

Medical Superintendent
Punjab Institute of Medical Sciences
Garha Road, Jalandhar

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

12/7/21

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Indian Institute of Food Processing Technology

(Ministry of Food Processing Industries, Government of India)

Pudukkottai Road, Thanjavur - 613 005, Tamil Nadu

M  F P I

e-CERTIFICATE

PARTICIPATION

This is to certify that **AKSHAY KUMAR PANDEY** has undergone **Two Weeks Online Internship Programme for Students on Food Processing Technology: Advances & Applications** organized by the **Department of Technology Dissemination, Indian Institute of Food Processing Technology (IIFPT)** from 3rd August 2020 to 14th August 2020.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Date: 14.08.2020

IIFPT/DTD/ITP/2020/367

2
10/08/20

Programme Coordinator



Università Commerciale
Luigi Bocconi

07/12/2020

Alisha Ahuja

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

2
10/10/24

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

COURSE
CERTIFICATE



Verify at coursera.org/verify/58QNMNQHZUEM



Università Commerciale
Luigi Bocconi

06/26/2020

Alisha Nandan

has successfully completed

食品和饮料管理

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Head
Deptt. of Food Science & Technology
J.K. Gujral Punjab Technical University
KAPURTHALA

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

COURSE
CERTIFICATE



Verify at coursera.org/verify/RJ924WQKMX9F



Università Commerciale
Luigi Bocconi

07/12/2020

Ananya Sharma

has successfully completed

食品和饮料管理

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

COURSE
CERTIFICATE



Verify at coursera.org/verify/K3S6A3KHUPV5



Università Commerciale
Luigi Bocconi

07/12/2020

Bavneet Kaur

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

3
10/10/20

COURSE
CERTIFICATE





Università Commerciale
Luigi Bocconi

07/11/2020

Drishti gupta

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

34
10/08/21

**COURSE
CERTIFICATE**



Verify at coursera.org/verify/SX2YBDMHHBFB

Coursera has confirmed the identity of this individual and
their participation in the course.



Università Commerciale
Luigi Bocconi

07/12/2020

Himanshu Saini

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

**COURSE
CERTIFICATE**



Verify at coursera.org/verify/L6WP8E6U28UW

Coursera has confirmed the identity of this individual and
their participation in the course.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

10/10/2020



Università Commerciale
Luigi Bocconi

07/12/2020

Komal

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

21/10/21

COURSE
CERTIFICATE



Verify at coursera.org/verify/BYGWDTHRRE77
Coursera has confirmed the identity of this individual and

P-Q



Università Commerciale
Luigi Bocconi

07/13/2020

mohit kumar

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

COURSE
CERTIFICATE



Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

22/10/21

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

Verify at coursera.org/verify/72K5GS4XVKBB
Coursera has confirmed the identity of this individual and



Università Commerciale
Luigi Bocconi

07/19/2021

PAYAL CHAUHAN

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

**COURSE
CERTIFICATE**



Upul K. Bhatia

Head of the Department
Department of Food Science & Technology
I.K. Gujral Punjab Technical University
Kapurthala

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

24/10/2021

Verify at www.coursera.org/verify - 141W01W01VZ
Coursera has verified the authenticity of this certificate and
the course was completed on 07/19/2021



Università Commerciale
Luigi Bocconi

07/15/2020

Rashmi Kumari

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

COURSE
CERTIFICATE



Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

Verify at coursera.org/verify/YE3eKSF26XBP
Coursera has confirmed the identity of this individual and
their participation in the course.

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

2/1/2021

Annexure 2

Annexure. 1-3-4-

P-12



Università Commerciale
Luigi Bocconi

07/19/2020

ROBIN VARGHESE

has successfully completed

Food & Beverage Management

an online non-credit course authorized by Università Bocconi and offered through
Coursera

Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA

Gabriele Troilo

Gabriele Troilo
Associate Professor
Department of Marketing
Università L. Bocconi

COURSE
CERTIFICATE





Università Commerciale
Luigi Bocconi

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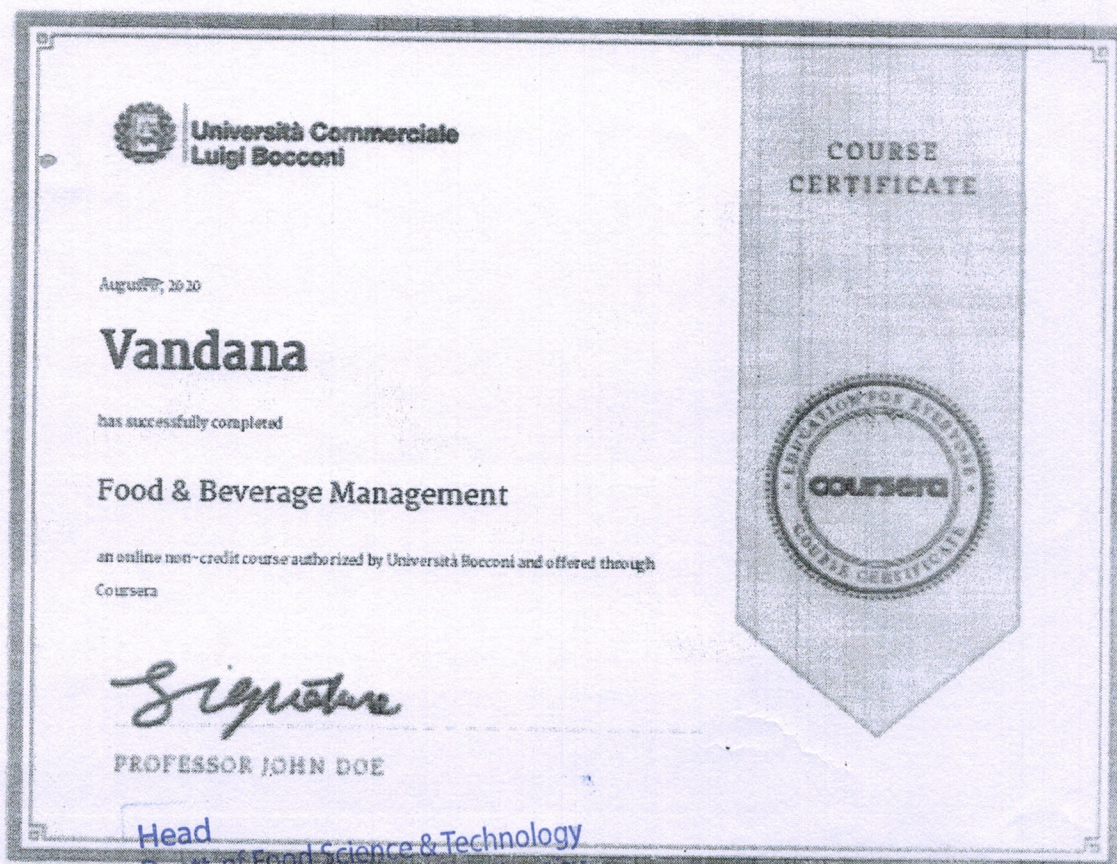


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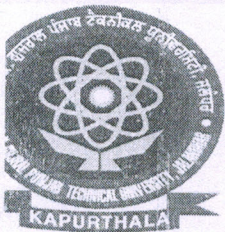
Head
Deptt. of Food Science & Technology
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KAPURTHALA

2/15/21

Annexure 2

Annexure - DFST - 13

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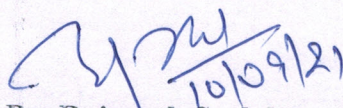
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I.K. Gujral Punjab Technical University, Kapurthala, Main Campus.
Estd. Under Punjab Technical University Act, 1997

Ref.No. I.K.G.P.U./FST/D-411

Dated. 10/9/2021

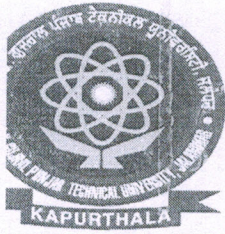
This is to certify that Amy Masih a student of M. Tech. Food Technology bearing Roll No 1916691 carried out research project, "Watermelon-proximate composition, polyphenol and their antioxidant activity" at Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala from January 2021 to August 2021. She has submitted the report of research project.

Her performance during the training was satisfactory. We wish her all the best for further endeavours.


10/09/21

Dr. Rajneesh Sachdev
Head (Department of Food Science & Technology)
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Main Campus
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Head
Deptt. of Food Science & Technology
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ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਕਪੂਰਥਲਾ, ਮੇਨ ਕੈਂਪਸ.
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Ref.No. I.K.G.PTU/FST/D-410

Dated. 10/9/2021

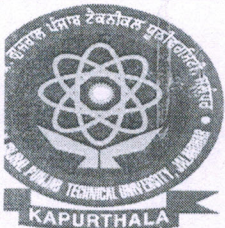
This is to certify that Anmol Dhillon a student of M. Tech. Food Technology bearing Roll No 1916692 carried out research project, "Study the Drying Characteristics Functional Properties and Antioxidant Properties of florets of banana inflorescence" at Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala from January 2021 to August 2021. She has submitted the report of research project.

Her performance during the training was satisfactory. We wish her all the best for further endeavours.

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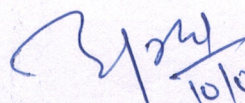
ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਕਪੂਰਥਲਾ, ਮੇਨ ਕੈਂਪਸ.
I.K. Gujral Punjab Technical University, Kapurthala, Main Campus.
Estd. Under Punjab Technical University Act, 1997

Ref.No. IKC/PTU/PST/D-409

Dated...10/9/2021

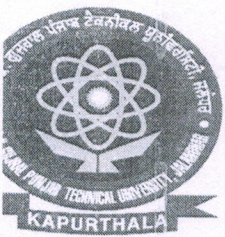
This is to certify that Manpreet Kaur a student of M. Tech. Food Technology bearing Roll No 1916693 carried out research project, "Muskmelon-Proximate composition, polyphenols and their anti-oxidant activity" at Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala from January 2021 to August 2021. She has submitted the report of research project.

Her performance during the training was satisfactory. We wish her all the best for further endeavours.


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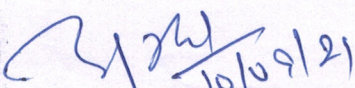


ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਕਪੂਰਥਲਾ, ਮੇਨ ਕੈਂਪਸ.
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Estd. Under Punjab Technical University Act, 1997

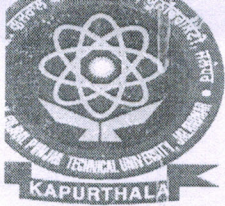
Ref.No. I.K.GPTU/EST/D-408

Dated. 10/9/2021

This is to certify that Monika Thakur a student of M. Tech. Food Technology bearing Roll No 1916694 carried out research project, "Development of a defined fermentation protocol for rice based alcoholic beverage" at Assam Agricultural University, Assam, from January 2021 to August 2021. She has submitted the report of research project.


Dr. Rajneesh Sachdev
Head (Department of Food Science & Technology)
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Head
Deptt. of Food Science & Technology
I.K. Gujral Punjab Technical University
KAPURTHALA



ਆਈ.ਕੇ. ਗੁਜਰਾਲ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਕਪੂਰਥਲਾ, ਮੇਨ ਕੈਂਪਸ.
I.K. Gujral Punjab Technical University, Kapurthala, Main Campus.
Estd. Under Punjab Technical University Act, 1997

Ref.No. *TKPTU/EST/D-407*

Dated. *10/9/2021*

This is to certify that Vani Jaychandran a student of M. Tech. Food Technology bearing Roll No 1916695 carried out research project, "Green Tea for weight Loss and Weight Management; Scientific Evidence, marketing and Consumer Perception" at Department of Food Science & Technology, Main Campus I.K. Gujral Punjab Technical University, Kapurthala from January 2021 to August 2021. She has submitted the report of research project.

Her performance during the training was satisfactory. We wish her all the best for further endeavours.

[Signature]
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**TO STUDY THE COMPLIANCE LEVEL OF BEER'S CRITERIA IN THE
PRESCRIPTION PATTERN OF GERIATRIC PATIENTS AT A TERTIARY CARE
HOSPITAL**

A DISSERTATION SUBMITTED TO

Total Page - 1
+ 122



I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY

MAIN CAMPUS, JALANDHAR (INDIA)

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTERS OF SCIENCE

IN

CLINICAL RESEARCH

By

MUNISH KUMAR

Regd. No. – 1930263

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I.K. Gujral Punjab Technical University
KAPURTHALA

Department of Food Science and Technology

I.K. Gujral Punjab Technical University Main Campus

CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the dissertation, entitled "TO STUDY THE COMPLIANCE LEVEL OF BEER'S CRITERIA IN THE PRESCRIPTION PATTERN OF GERIATRIC PATIENTS AT A TERTIARY CARE HOSPITAL" in fulfilment of the partial requirements for the award of the degree of Master of Science in Clinical Research and submitted in I.K. Gujral Punjab Technical University, Jalandhar is an authentic (i.e. there is no plagiarism) record of my own work carried out under the supervision of Dr. Gazal Sharma, Dr. Malika Arora and Dr Suresh Goyal.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree of this or any other University/Institute.

Munish Kumar

This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

(Dr. Gazal Sharma)	(Dr. Malika Arora)	(Dr. Suresh Goyal)
Supervisor	Co-Supervisor	Co-Supervisor
Assistant Professor	Research Scientist	Assistant Professor
Department of Food Science & Technology	Department of University Centre of Excellence	Department of Urology
IKG Punjab Technical University, Main	in Research,	Guru Gobind Singh
Kapurthala, Punjab, India	BFUHS, Faridkot, India	Medical College and Hospital, Faridkot, India

M.Sc. Viva-Voice examination of _____ has been held on _____

Sign. of Supervisor(s)

Sign. of Co-Supervisor(s)

Sign. of External Examiner

**STUDY OF PRESCRIPTION PATTERNS OF
ANTIHYPERTENSIVE DRUGS AND ADHERENCE TO
JOINT NATIONAL COMMITTEE GUIDELINES OVER A
DECADE**

A DISSERTATION SUBMITTED



I.K.GUJRAL PUNJAB TECHNICAL UNIVERSITY
JALANDHAR (PUNJAB)

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE
IN
CLINICAL RESEARCH

BY

PRIYA CHAUHAN

Head
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Regd. No. - 1930265

21/11/21

Department of Food Science and Technology

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I hereby certify that the work which is being presented in the dissertation, entitled "STUDY OF PRESCRIPTION PATTERNS OF ANTIHYPERTENSIVE DRUGS AND ADHERENCE TO JOINT NATIONAL COMMITTEE GUIDELINES OVER A DECADE" in fulfillment of the partial requirements for the award of the degree of Master of Science in Clinical Research and submitted in I. K. Gujral Punjab Technical University, Jalandhar is an authentic (i.e., there is no plagiarism) record of my own work carried out under the supervision of Dr. Gazal Sharma and Dr. Shalini Salwan.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree of this or any other University/Institute.

(Name of the Candidate)

Priya Chauhan

This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

(Dr. Gazal Sharma)

(Dr. Shalini Salwan)

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The M.Sc. Viva-Voice examination of candidate _____

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Sign. of Supervisor Sign. of Co-Supervisor(s) Sign. of External Examiner

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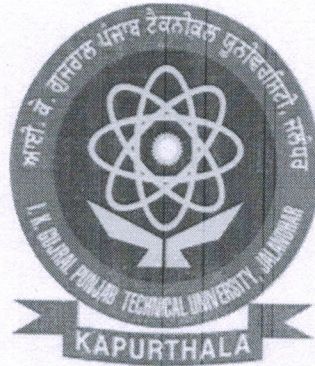
CHAPTER 05

SUMMARY AND CONCLUSION

It was observed that 59% of the total participants were female candidates and 41% were the male candidates. According to the age distribution maximum number of the patients were in the age group of 41-60, which showed high rate in elderly population. However, more female candidates showed an earlier onset of hypertension. It was observed that 40% of the drugs prescribed were ARBs followed by calcium channel blockers which was 36%. About 66.5% of the prescriptions contained single drug and 26.2% prescriptions contained dual drugs. 7.2% drugs were three in number and four drugs were prescribed only in 0.1% prescriptions. It was also concluded that there were various combinations of the antihypertensive drugs prescribed but the most of the combination used was ARB + CCB, which was 35.78%. FDCs had been quietly used. This may be used to improve the health of patient and it reduce the cost of the treatment. These types of trend of FDCs also reported in other studies. It was observed that most of the patients (34.45%) fall in the category of hypertension stage 1. As compare to the 10 year ago study data it was found that the rationality analysis showed 55.89% of the total patients achieved the blood pressure goal according to the Joint National Committee 8 guidelines. One of the study by Fred E. Husser., and Franz H. Messerli. showed that there were so many Adverse effects of the antihypertensive drugs used at that time. Patients are needed to provide information and proper counselling regarding the ADRs of drugs; this would refine the quality of life. 55.89% of the prescriptions were found rational. More changes are needed to be done, in prescription of antihypertensive drugs in hypertensive patients. There were some limitations of the current study, such as less time period of the study and lesser number of subjects which were included in the study. The main limitation of this study was that all the prescriptions were collected from the inpatient from a single hospital and it may not be a representative of prescribing pattern across the city. Lack of the knowledge of previous drug therapy of the patients were also a major limitation of this study. However, further more studies are necessary to be done for the rationale of the prescription pattern of antihypertensive drugs. (Gupta R. et. al.)

A PATTERN AND RATIONALITY ANALYSIS OF FIXED DOSE COMBINATIONS PRESCRIBED IN A TEACHING HOSPITAL

A DISSERTATION SUBMITTED



I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY
JALANDHAR (PUNJAB)

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE
IN
CLINICAL RESEARCH

BY

SIMRAN JEET KAUR

Regd. No. – 1930266

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Head
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I.K. Gujral Punjab Technical University
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24/11/24

Candidates Declaration

I hereby certify that the work which is being presented in the dissertation, entitled "A PATTERN AND RATIONALITY ANALYSIS OF FIXED DOSE COMBINATIONS PRESCRIBED IN A TEACHING HOSPITAL" in fulfillment of the partial requirements for the award of the degree of Master of Science in Clinical Research and submitted in I.K.Gujral Punjab Technical University, Jalandhar is an authentic (i.e., there is no plagiarism) record of my own work carried out under the supervision of Dr. Shabir Sidhu and Dr. Jagminder Kaur Bajaj.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree of this or any other University/Institute.

(Name of the Candidate)

Simranjeet Kaur

This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

(Dr. Shabir Sidhu)

Supervisor Assistant Professor

Department of Food Sciences
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I. K. Gujral Punjab Technical

University, Main Campus

Kapurthala, Punjab, India

(Dr. Jagminder Kaur Bajaj)

Co-Supervisor

Head of Department of

Pharmacology, Punjab

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Jalandhar, Punjab, India

The M.Sc. Viva-Voice examination of candidate _____ has
been held on _____

Sign. of Supervisor

Sign. of Co-Supervisor(s)

Sign. of External Examination

Head

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I.K. Gujral Punjab Technical University

KAPURTHALA

24/11/24

ABSTRACT

Several studies in the literature are available which show that fixed-dose combinations (FDCs) are misused or prescribed inappropriately by the practitioners. Such trends are reported both from India and globally. In chronic diseases, use of FDCs improve patient compliance and decrease economic burden of the patient. Due to the high demand for FDCs, misuse of these drugs is also increased. Practitioners prescribe the banned or controversial drugs and sometimes they prescribe drugs to patients that are not required. Recent systematic studies, meta-analysis, and questionnaire-based studies revealed that the FDCs are over prescribed, most of the drugs are irrational and only a small number of FDCs are prescribed from the National List of Essential Medicines (NLEM) or WHO Model List of Essential Medicines (MLEM). With this background, the current study was planned to explore the prescription pattern of FDCs in a tertiary care teaching hospital.

The present study was an observational cross-sectional descriptive study. The study was conducted at Punjab Institute of Medical Sciences (PIMS), Jalandhar from February 2021 to June 2021. The study was conducted after obtaining IEC approval. In this study, all the patients visiting the hospital pharmacy after OPD consultation were approached for screening the prescription. The prescriptions were screened for the presence of FDCs. Demographic data (age, gender), data regarding the number of prescriptions with generic drugs, type of FDCs, drugs prescribed from NEML and WHO MLEM was collected. The prescribed FDCs were checked for the rationality using a scoring system. The data are summarized as frequency and presented using tables and histograms. The data was analyzed using Microsoft Excel.

A total of 1000 prescriptions were screened and 601 prescriptions contained FDCs. In 601 FDC prescriptions, 1039 active pharmaceutical ingredients (APIs) were present. The average number of FDCs per prescription was 1.72. About 58% of FDC prescriptions were of female patients and the rest were of male patients. The majority of the patients (48.9%) were in the age group of 19-40 years. About 68% of the prescribed FDCs were generic formulations. The majority of the prescription contained single FDC (49.3%) and 34.1% of the prescriptions contained two FDCs. 74.9% of FDCs contained two active pharmaceutical ingredients and 25.1% of the FDCs contained more than two APIs. 99% of the FDCs were prescribed as solid oral dosage form. The department most frequently prescribing FDCs was medicine (37.3%) followed by 30.3% of the prescriptions from psychiatric OPD and 32.4% of the prescriptions from all other departments (OBG, orthopaedics, surgery, chest & TB, ophthalmology,

dermatology, and dentistry). The most frequently prescribed FDCs (25.8%) were for pain and inflammation, followed by 24.4% prescriptions of health supplements, 20.5% for GI disorders, and the FDCs prescribed for rest of the disorders was below 10%. For checking the rationality of the prescribed FDCs, the rubric scoring method was used. In this, we excluded health supplements (214 FDC) because of their unclear pharmacological action. From the remaining 820 FDCs, the duplication were removed and finally 130 FDCs were included in rationality analysis. In this scoring, 64.6% FDCs contained APIs that were registered for marketing in India by CDSCO and only 5.4% FDCs listing in both DCG(I) and WHO MLEM. The majority of the prescribed FDCs did not have monographs in the Medscape/ US FDA Orange book / drugs.com database. Most of the prescribed FDCs were in the score category of 2.25- 4 that is 86.1%. Only 11 FDC attained the score \geq of 5. The FDC obtaining the score of 5 or more is considered rational. The majority of the FDCs, 91.5% were irrational and the rest 8.5% were rational. The CDSCO in the year 2018 banned some of the FDCs. The prescribed FDCs were check from that list and it was found that 3 (2.3%) FDCs were from the banned list. Only 3.1% FDCs were prescribed from WHO MLEM and 1.5% FDC were from NEML.

It can be concluded that FDCs are being prescribed without appropriate guidelines in the majority of the cases. The practitioners were also not following the NLEM and DCG(I) lists. With the increased use of the irrational FDCs, the chances of drug-drug interaction, adverse drug reaction also increases. As the trend of polypharmacy was observed, it indicates that practitioners were managing the patients symptomatically rather than specifically managing the disease. These findings suggest the need of sensitization programs for practitioners for appropriate prescribing practices and appropriate use of FDCs.

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24
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CHAPTER 6

SUMMARY & CONCLUSION

Since the launch of fixed-dose combinations (FDC) in the market, they acquired approximately 50% of the market capital. Recent studies show, the trend of prescribing FDCs has increased as FDCs are advantageous in chronic diseases in improving patient compliance. The FDCs approved for marketing should have sound scientific evidence but Indian market has several FDCs which contain active pharmaceutical ingredients (APIs) without scientific basis for combining in fixed dose. The use of irrational FDCs increase the economic burden on the patient and pose health hazards. With this background, the current study was designed to check the rationality of prescribed FDCs and to see if there is any change from previous trends.

The current cross-sectional observational study was conducted in a tertiary care teaching hospital in Jalandhar. The study was conducted after obtaining Institution Ethics Committee approval. In total 1000 prescriptions from various outpatient departments of the hospital were screened. Out of the screened prescriptions, 601 prescriptions were of FDC and the total FDC drug were 1039.

It was observed that 61% of the total prescriptions contained FDCs. About 99% of the prescribed FDCs were in solid oral dosage form. The highest FDC prescribing department was medicine. About 49.3% of the prescriptions contained single FDC per prescription and 34.1% prescriptions contained 2 FDCs per prescription. Majority of the prescribed FDCs had two active pharmaceutical ingredients. The category in which highest number of FDCs were prescribed was pain and inflammation followed by gastrointestinal disorders. We exclude health supplements (24.4%) from our study because of the unclear scientific evidence. The rubric scoring method was used to assess the rationality of prescribed FDC. The rationality analysis showed that only 8.5% of the prescribed FDCs were rational and rest were irrational. 2.3 % of the prescribed FDCs were banned by the CDSCO. Only 5.3% of the prescribed FDC were from WHO MLEM and 2.7% of the prescribed FDC were from NLEM. Out of 130 prescribed FDCs, 14 FDCs contained APIs with potential drug interaction leading to unfavorable consequences.

The irrational use of FDCs observed in the current study is similar to the previously reported observational studies and meta-analysis. Hence, no major change was observed in prescribing

1.3.4

practices of the FDCs. In the end, the observations made in the current study show the need for sensitization programs for the practitioners focusing on appropriate prescribing practices and specifically for rational and appropriate use of the FDCs.

Head
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2
7/11/17

**PRESCRIPTION PATTERN ANALYSIS OF PROTON PUMP
INHIBITORS USING WHO PRESCRIBING INDICATORS IN A
TERTIARY CARE TEACHING HOSPITAL**

A DISSERTATION SUBMITTED TO



I.K. GUJRAL PUNJAB TECHNICAL UNIVERSITY

MAIN CAMPUS, JALANDHAR (INDIA)

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTERS OF SCIENCE

IN

CLINICAL RESEARCH

By

MEHTAB SINGH

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Department of Food Science and Technology

I.K. Gujral Punjab Technical University Main Campus

21
14/10/21

P-15

Candidates Declaration

I hereby certify that the work which is being presented in the dissertation, entitled "PRESCRIPTION PATTERN ANALYSIS OF PROTON PUMP INHIBITORS USING WHO PRESCRIBING INDICATORS IN A TERTIARY CARE TEACHING HOSPITAL" in fulfillment of the partial requirements for the award of the degree of Master of Science in Clinical Research and submitted in I.K.Gujral Punjab Technical University, Jalandhar is an authentic (i.e., there is no plagiarism) record of my own work carried out under the supervision of Dr. Shabir Sidhu and Dr. Rakesh.

The matter embodied in this dissertation has not been submitted by me for the award of any other degree of this or any other University/Institute.

Mehtab Singh

(Name of the Candidate)

This is to certify that the above statement made by the candidate is correct to the best of our knowledge.

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(Dr. Rakesh)
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Associate Professor
Department of Pharmacology
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KAPURTHALA

21
7/11/21

ABSTRACT

Several studies in the literature are available which show that proton pump inhibitors (PPI) are misused or prescribed inappropriately by the practitioners. Such trends are reported both from India and globally. The approved indications of PPIs do not include generalized acid suppression. Rather these agents should be used for various forms of GERD, patients receiving NSAIDs with high bleeding risk. The inappropriate chronic use of PPIs is associated with severe adverse effects. Recent systemic reviews and meta-analyses studying the prescription pattern of PPIs in India over the last two decades revealed that the PPIs are being over prescribed, prescribed for indications other than the approved indications. With this background, the current study was planned to explore the prescription pattern of PPIs in a tertiary care teaching hospital.

The present study was a cross-sectional observational study conducted at Punjab Institute of Medical Sciences (PIMS), Jalandhar from February 2021 to June 2021. The study was conducted after obtaining the approval of the Institute Ethics Committee of PIMS, Jalandhar. The prescriptions received at the pharmacy department of the hospital from different OPDs were screened. The prescriptions were screened for the presence of PPIs. The data regarding demographics of the patient, the prescribing department, the total number of drugs prescribed per prescription was collected. Further data was also collected regarding the generic prescriptions, drugs prescribed from NEML, and co-prescribed medications. The data are summarized as frequency, relative frequency and presented using tables and histograms. The data was analysed using Ms Excel.

It was observed that every second prescription received in the pharmacy department was of PPIs. In total 1000 prescriptions were screened and 500 prescriptions were of PPIs. 63% of the prescriptions were of female patients and the rest of the prescriptions were of male patients. The majority of the patients (58.4%) were in the age group of 18-40 years. 95.2% of the prescriptions contained PPIs in fixed-dose combination formulation and only 4.8% of the prescription contained PPIs as single API. The most frequently prescribed PPI as a single API was pantoprazole (2.4%). The capsule formulation of omeprazole is the only PPI included in the NLEM and WHO model list of essential medicines. In our study, only 0.4% of the prescriptions were of omeprazole in capsule form. Among FDCs rabeprazole was the most frequent API (50.4%).

Rabeprazole was combined either with domperidone or itopride. The second API, in all the FDCs, was observed to be a prokinetic agent, either domperidone or itopride. As per the approval accorded by DCG(I), a combination of the prokinetic agent with PPI should be used only in cases of GERD which are non-responsive to PPI alone. The approved indications of PPIs are GERD and other severe forms of secretory disorders. Based upon the approved indications, the majority of the PPI prescriptions are expected from the department of medicine and specifically from the gastroenterology clinic. However, the results of the present study showed that 60.8% of the prescriptions screened were from departments other than medicine and only 39.2% of the prescriptions were from the medicine department. Further bifurcation of medicine department prescriptions revealed that only 4.8% of the prescriptions were from gastroenterology clinic. The majority of the medicine department prescriptions were from general medicine (31%). Even more alarming was that 95-100% of the prescriptions from departments (Obstetrics & Gynaecology+ Psychiatry + Dermatology + ENT+ Orthopaedics + Dental + Ophthalmology+ Chest & TB + paediatrics) other than medicine were FDCs containing PPI and prokinetic agent as such FDCs are approved for PPI refractory cases. The analysis of the prescription using WHO prescribing criteria showed that the average number of drugs prescribed per encounter was 4.63 as against the optimal level of 1.6-1.8. These results indicate the practice of polypharmacy. Further, only 0.4% of the drugs were prescribed from NLEM against the optimal level of 100%. The drugs prescribed by generic name were 81.4% against the optimal level of 100%. These indicators pointed towards non-compliance of the practitioners for NLEM.

It can be concluded that PPIs are being prescribed without appropriate indication in the majority of the cases. The use of PPI and the prokinetic agent is reserved for PPI refractory cases but it was observed that FDCs are being used routinely. As the trend of polypharmacy was observed it indicates that practitioners were managing the patients symptomatically rather than specifically managing the disease. The practitioners were also not following the NLEM. These findings suggest the need for sensitization programs for practitioners for prescribing practices and appropriate use of PPIs.

CHAPTER 6

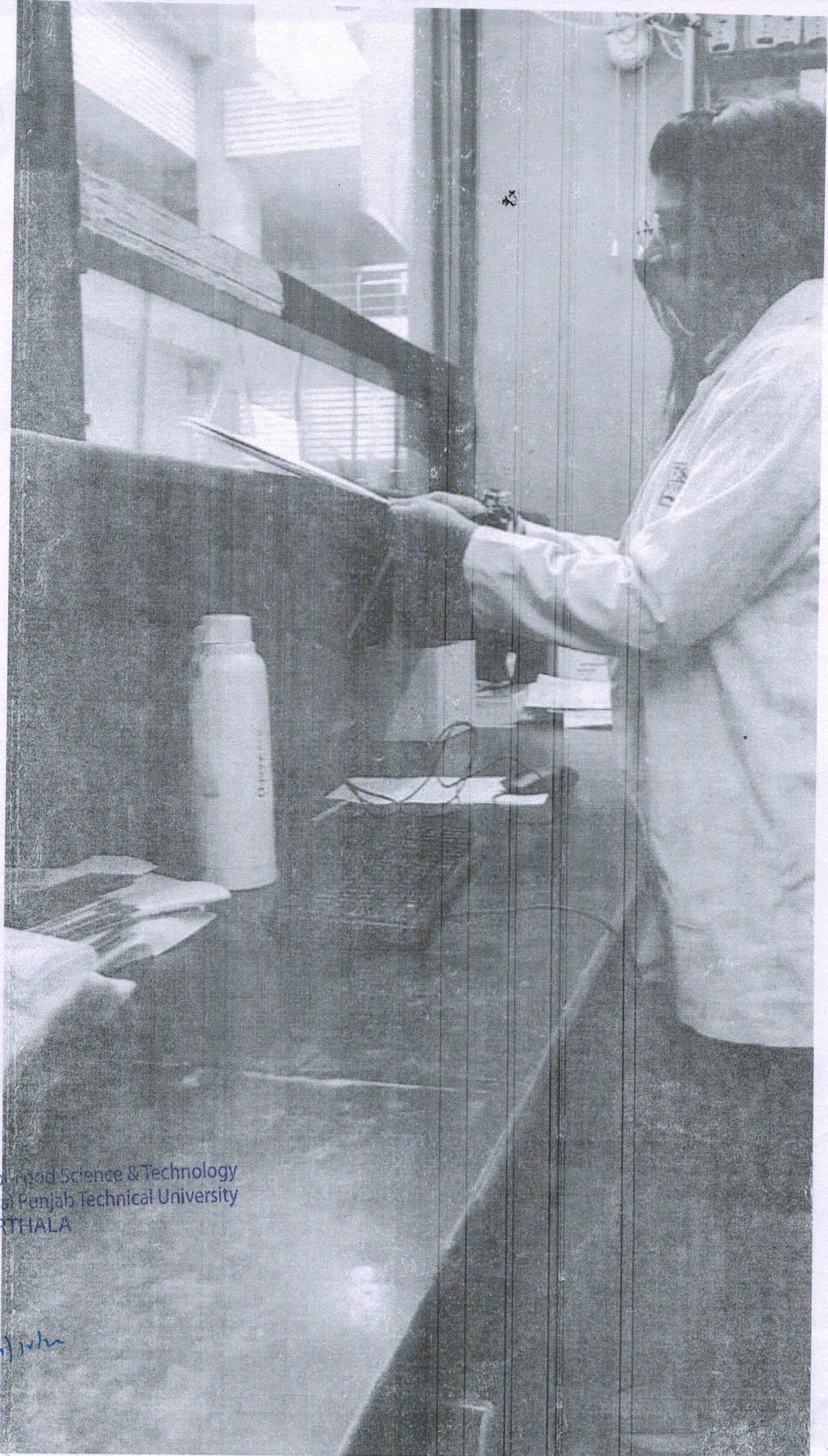
SUMMARY & CONCLUSION

Since the launch of proton pump inhibitors (PPI) in the market, they have been amongst the top-selling drugs globally. Several studies are available in the literature that shows misuse or inappropriate use of PPIs is universal. The chronic use of PPIs is associated with some severe adverse effects. Recently two published studies exploring the prescription pattern of PPIs in India from their launch till 2017, pointed out gross inappropriate use of PPIs, overprescribing of PPIs and prescription of PPIs for non-approved indications. With this background, the current study was planned to explore if there is any change in the PPI prescription pattern.

The current cross-sectional observational study was conducted in a tertiary care teaching hospital in Jalandhar. The study was conducted after obtaining Institution Ethics Committee approval. In total 1000 prescriptions from various outpatient departments of the hospital were screened. Out of the screened prescriptions, 500 prescriptions were of PPIs.

The salient findings of the study were that less than 40% of the prescriptions were from the medicine department and within the medicine department, only 24 prescriptions were from the gastroenterology clinic. As the approved indications do not promote the use of PPIs for generalized acid suppression, the department wise PPI use pattern indicates that it cannot be concluded with surety that inappropriate use was PPIs was not prevalent. Approximately 95% of the prescriptions of PPIs were as a fixed-dose combination with a prokinetic agent as a second API. If we go by the approval status of PPI + prokinetic agent FDCs, they should be used only in the PPI refractory cases of GERD. However, the rampant use of FDCs in the current study indicates non approved use of FDCs. Only 0.4% of PPIs were prescribed from the NLEM. The prevalence of polypharmacy also was high. The findings of the present study are similar to the reported systemic review and meta-analysis of the prescription pattern of PPIs in India.

The observations made in the current study show the need for sensitization programs for the practitioners focusing on appropriate prescribing practices and specifically for rationale use of the PPIs.



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