BIOGRAPHICAL SKETCH

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NAME: Iyer, Prasad G.

eRA COMMONS USER NAME (credential, e.g., agency login): g_prasad

POSITION TITLE: Professor of Medicine

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
All India Institute of Medical Sciences, New Dehli, India	M.B.,B.S.	05/1993	Medicine
All India Institute of Medical Sciences, New Delhi, India	M.D.	05/1997	Internal Medicine
University of Wisconsin Medical School Milwaukee Clinical Campus, Milwaukee, WI	Residency	05/1999	Internal Medicine
Mayo Clinic College of Medicine, Rochester, MN	Fellowship	08/2006	Gastroenterology
Mayo Graduate School, Mayo Clinic College of Medicine, Rochester, MN	M.Sc.	08/2007	Clinical and Translational Research

A. Personal Statement

I am currently a Professor of Medicine at the Mayo Clinic College of Medicine and a Consultant in the Division of Gastroenterology and Hepatology, Department of Internal Medicine, Mayo Clinic, Rochester, MN. I completed my Gastroenterology training at Mayo Clinic and a Master's Degree in Clinical and Translational Research, which included training in study design, clinical epidemiology and biostatistics, through the Mayo Graduate School, Mayo Clinic College of Medicine. My clinical and research interests include early detection and therapy of Barrett's-related neoplasia and delineating the mechanisms of obesity-related esophageal carcinogenesis. My outpatient and procedure practice is focused on providing care to patients with esophageal diseases, reflux, Barrett's esophagus (BE) and esophageal adenocarcinoma (EA). I have led and published multiple retrospective and prospective studies, as well as clinical trials in these areas. We have recently published several studies documenting the reflux independent association of abdominal visceral fat with esophageal inflammation, BE and EA. In this grant we focus on the functional relevance of the Thromboxane A2 pathway in esophageal carcinogenesis using a comprehensive multidisciplinary approach, state of the art techniques and a randomized placebo controlled clinical trial based on exciting preliminary data. My prior training, experience, and skills in clinical trials make me qualified to lead this proposal.

B. Positions and Honors

Positions and Employment

1999	Chief Resident, Department of Internal Medicine, University of Wisconsin Medical School Milwaukee Clinical Campus, Sinai Samaritan Medical Center
2000-2003	Clinical Instructor, Department of Internal Medicine, University of Wisconsin Medical School, Milwaukee Clinical Campus, Sinai Samaritan Medical Center
2001-2003	Clinical Instructor, Department of Internal Medicine, Medical College of Wisconsin Milwaukee, WI
2003-2006	Clinical Fellow, Division of Gastroenterology and Hepatology, Department of Medicine, Mayo Clinic College of Medicine, Rochester, MN
2005-2006	Instructor, Department of Medicine, College of Medicine, Mayo Clinic, Rochester, MN
2006-2009	Senior Associate Consultant, Gastroenterology & Hepatology, Mayo Clinic, Rochester, MN
2009-present	Consultant, Gastroenterology & Hepatology, Mayo Clinic, Rochester, MN

2007-2011 Assistant Professor, Department of Medicine, College of Medicine, Mayo Clinic, Rochester, MN
2011-present Associate Professor, Department of Medicine, College of Medicine, Mayo Clinic Rochester, MN
2008-present Associate Editor, Diseases of the Esophagus
2013-present Director, Postdoctoral Programs, Mayo Center for Clinical and Translational Science

Other Experience and Professional Memberships

2003-present Fellow, American College of Physicians
2007-present Reviewer, American Journal of Gastroenterology
2007-present Reviewer, Clinical Gastroenterology and Hepatology
2013-present Chair, International Committee, American Society for Gastrointestinal Endoscopy
2013-present Fellow, American College of Gastroenterology
2013-present Editorial Board Member, Current Treatment Options in Gastroenterology
2014-present Member, American College of Gastroenterology, Research Committee
2014-present Associate Editor, American Society of Gastrointestinal Endoscopy-Gastrointestinal Endoscopy
2008-2014 Associate Editor, Diseases of the Esophagus
2013-2014 VA Merit Grant Reviewer: Epidemiology
2010-2012 Member, American College of Gastroenterology, Practice Parameters Committee

Honors

2013 New Investigator Award, Department of Medicine, Mayo Clinic
2013 Fellow, American College of Gastroenterology
2013 Fellow, American Society of Gastrointestinal Endoscopy
2012 Edward C. Rosenow Endowed Professorship Internal Medicine Residency Research Mentorship Award
2009 American College of Gastroenterology Governor's Award for Excellence in Clinical Research
2006 J. Arnold Bargen Award, Division of Gastroenterology and Hepatology, College of Medicine, Mayo Clinic, Outstanding Research Achievement as a Fellow in Gastroenterology
2005 Astra Zeneca Senior Fellow Award, American College of Gastroenterology
1999 Dr. Rick Wartgow Award, Outstanding Medical Resident, Department of Internal Medicine, University of Wisconsin Medical School, Sinai Samaritan Medical Center, Milwaukee, WI.
1994 Institute Gold Medal, Best Undergraduate Student of the Year, Medical School

C. Contribution to Science

1. Delineating the association of central obesity with esophageal inflammation, Barrett's esophagus and esophageal adenocarcinoma.

   The association of obesity with esophageal inflammation, Barrett's esophagus and neoplasia was thought to be mediated mainly through mechanical means, with obesity disrupting the gastroesophageal junction reflux barrier. However, other non-reflux mediated gastrointestinal malignancies such as colon and pancreas are also associated with obesity. We have demonstrated that in addition to mechanical means, central obesity (visceral abdominal fat) is strongly and consistently associated with esophageal inflammation, metaplasia and neoplasia. This association is independent of reflux and also shows a dose response relationship. Several sequelae of central obesity also are independently associated with Barrett's esophagus as shown by studies performed in our group. This association is mediated by several mechanisms, which need to be studied so that interventions to block these pathways can be developed. In a recent systematic review and meta-analysis we showed that elevated levels of serum Leptin are a strong risk factor for BE.

   a. Chandar, A.K., Devanna, S., Lu, C., Singh, S., Greer, K., Chak, A., Iyer, P.G. (2015). Association of Serum Levels of Adipokines and Insulin With Risk of Barrett's Esophagus: a Systematic Review and Meta-Analysis. Clinical Gastroenterology and Hepatology.
   b. Chandar, A.K., Iyer, P.G. (2015). Role of Obesity in the Pathogenesis and Progression of Barrett's Esophagus. Gastroenterology Clinics of North America,44(2):249-64.
   c. Singh, S., Sharma. A.N., Murad, M.H., Buttar, N.S., El-Serag, H.B., Katzka, D.A., Iyer, P.G.(2013). Central adiposity is associated with increased risk of esophageal inflammation, metaplasia, and adenocarcinoma: a systematic review and meta-analysis. Clinical Gastroenterology and Hepatology, 11(11):1399-1412. PMCID: PMC3873801.

d. Iyer, P.G., Borah, B.J., Heien, H.C., Das, A., Cooper, G.S., Chak, A.(2013). Association of Barrett's esophagus with type II Diabetes Mellitus: results from a large population-based case-control study. Clinical Gastroenterology and Hepatology, 11(9):1108-1114. PMCID: PMC3865768.

2. Screening for BE and EAC
Screening for BE and EAC faces several challenges. We have led studies documenting the overall high interest in the community for novel and minimally invasive techniques for BE and EAC screening. We have also identified several novel risk factors for BE. Recently, we assessed the comparative effectiveness (outcomes of participation rates, tolerability, yield and quality of examination in a randomized community based controlled trial) of unsedated transnasal endoscopy (performed in an endoscopy suite and mobile research van) and conventional sedated endoscopy in screening for BE and other gastroesophageal reflux complications. We demonstrated in these studies that minimally invasive studies such as uTNE are equally acceptable and tolerated along with comparable yield and quality of examination, when compared with sedated endoscopy, at lower cost.
   a. Gupta, M., Iyer, P.G. (2015). Screening for Barrett's Esophagus. Gastroenterology Clinics of North America, 44(2):265-83.
   b. Sami, S.S., Dunagan, K.T., Johnson, M.L., Schleck, C.D., Shah, N.D., Zinsmeister, A.R., Wongkeesong, L.M., Wang, K.K., Katzka, D.A., Ragunath, K., Iyer, P.G.(2015). A randomized comparative effectiveness trial of novel endoscopic techniques and approaches for Barrett's esophagus screening in the community. American Journal of Gastroenterology, 110(1):148-58. PMCID: PMC4387566.
   c. Sami, S.S., Ragunath, K., Iyer, P.G.(2015). Screening for Barrett's esophagus and esophageal adenocarcinoma: rationale, recent progress, challenges, and future directions. Clinical Gastroenterology and Hepatology, 13(4):623-34. PMCID: PMC4254386.
   d. Chang, J.Y., Talley, N.J., Locke, G.R. 3rd, Katzka, D.A., Schleck, C.D., Zinsmeister, A.R., Dunagan, K.T., Wu, T.T., Wang, K.K., Prasad, G.A. (2011). Population screening for Barrett’s esophagus: a prospective randomized pilot study. Mayo Clinic Proceedings, 86(12):1174-80. PMCID: PMC3228617.

3. Endoscopic therapy of esophageal neoplasia (HGD and EAC).
We have reported comparable outcomes of subjects treated with endoscopic therapy for BE with HGD and intramucosal adenocarcinoma (IMCa)and those treated surgically. These data have led to endoscopic therapy becoming a first line recommended therapy in patients with BE HGD or IMCa. We have also reported the prognostic factors which determine outcomes following endoscopic therapy of T1 esophageal adenocarcinoma. Data from our center and from a multicenter consortium have recently shown that endoscopic therapy of BE with LGD also leads to reduction of progression to HGD or EAC. Lastly we have shown substantial rates of recurrent BE following successful ablation, leading to recommendations for continued and careful endoscopic surveillance of the tubular esophagus and gastroesophageal junction, following ablation.
   a. Leggett, C.L., Lewis, J.T., Wu, T.T., Schleck, C.D., Zinsmeister, A.R., Dunagan, K.T., Lutzke, L.S., Wang, K.K., Iyer, P.G. (2014). Clinical and histologic determinants of mortality for patients with Barrett's esophagus-related T1 esophageal adenocarcinoma. Clinical Gastroenterology and Hepatology, 13(4):658-64. PMCID: PMC4336231.
   b. Timmer, M.R., Brankley, S.M., Gorospe, E.C., Sun, G., Lutzke, L.S., Iyer, P.G., Halling, K.C., Krishnadath, K.K., Wang, K.K. (2014). Prediction of response to endoscopic therapy of Barrett's dysplasia by using genetic biomarkers. Gastrointestinal Endosccopy, 80(6):984-91. PMCID: PMC4311726.
   c. Small, A.J., Araujo, J.L., Leggett, C.L., Mendelson, A.H., Agarwalla, A., Abrams, J.A., Lightdale, C.J., Wang, T.C., Iyer, P.G., Wang, K.K., Rustgi, A.K., Ginsberg, G.G., Forde, K.A., Gimotty, P.A., Lewis, J.D., Falk, G.W., Bewtra, M. (2015). Radiofrequency Ablation Is Associated With Decreased Neoplastic Progression in Patients With Barrett's Esophagus and Confirmed Low-Grade Dysplasia. Gastroenterology, [Epub ahead of print] PubMed PMID: 25917785.
   d. Gupta, M., Iyer, P.G., Lutzke, L., Gorospe, E.C., Abrams, J.A., Falk, G.W., Ginsberg, G.G., Rustgi, A.K., Lightdale, C.J., Wang, T.C., Fudman, D.I., Poneros, J.M., Wang, K.K. (2013). Recurrence of esophageal intestinal metaplasia after endoscopic mucosal resection and radiofrequency ablation of

Barrett's esophagus: results from a US Multicenter Consortium. Gastroenterology, 145(1):79-86. PMCID: PMC3696438.

Complete List of Research-Related Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/prasad.iyer.1/bibliography/45103648/public/?sort=date&direction=ascending

D. Research Support

Ongoing Research Support

NIH, CA 163060-2 (Iyer) 09/26/2011-08/31/2016
Barrett's Esophagus Translational Research Network
The major goal of this multicenter study is to identify the susceptibility genes associated with subjects with/without a family history of Barrett's and Esophageal Adenocarcinoma through collection of blood, tissue and brush cytology samples.
Role: PI

R01 CA 163004-3 (Wang) 09/26/2011 – 08/31/2016
Stem Cells and the Origins of Barrett's Esophagus
The major goals of this study are to determine the site of origin of Barrett's esophagus and identify biomarkers of non-response to therapy and of recurrent IM after successful eradication
Role: Co-Investigator

UL 1 TR000135-08 (Khosla) 07/01/2011 – 06/30/2016
Mayo Clinic Center for Translational Science Activities
The goal of the Mayo Clinic CTSA is to continue to build a broad-based and integrated home for clinical and translational science at Mayo Clinic that will ultimately improve human health.
Role: Co-Investigator

Completed Research Support (past 3 years)

Takeda Pharmaceuticals America (Iyer) 10/15/2009 - 04/14/2014
Does Intensive Acid Suppression Reduce Esophageal Inflammation and Recurrent Barrett's Esophagus following Ablation? : A Randomized Controlled Trial
The aim of this study is to compare markers of inflammation (histology, COX-2 gene expression and PGE2 levels) in esophageal biopsies, between patients treated with dexlansoprazole 60mg/day and those treated with symptom guided PPI therapy (using omeprazole 20/40 mg/day) at 6 months following ablation.
Role: PI

NIDDK, RO1 DK-70863-3 (Iyer) 09/01/2008 - 03/31/2013
Familial Barrett's Esophagus
This multicenter investigation aims to identify the susceptibility genes associated with Familial Barrett's Esophagus through collection of blood samples from persons and relatives affected with Barrett's and/or Esophageal Adenocarcinoma.
Role: PI

NIDDK, 1RC4DK090413-2 (Iyer) 09/30/2010 – 06/30/2013
Comparative Effectiveness of endoscopic assessment of GER and BE
The major goal is to assess the participation rates, yield and resource utilization of screening with sedated endoscopy and unsedated transnasal endoscopy (in the hospital and community) in Olmsted County, MN.
Role: PI

Junior Faculty Development Grant (Iyer) 07/01/2009 – 06/30/2014
American College of Gastroenterology
Epidemiology of Barrett's Esophagus: A Population Based Study

The major goal of this study is to assess the ability of novel non-invasive techniques to enhance participation in population based screening for BE/esophageal adenocarcinoma.
Role: PI

University Hospitals of Cleveland (Iyer) 12/29/2011 – 08/28/2014
Services Agreement: Association of Barrett's Oesophagus with Type II Diabetes Mellitus: NCQ7820, BE+ DM2
Role: PI

IntroMedic Co., Ltd 12/01/2013-11/30/2014
Prospective study to compare the efficacy of E.G. Scan to detect Barrett's esophagus compared with standard endoscopy
The aim of this study is to evaluate how well EG Scan II can visualize abnormalities in the esophagus compared to sedated endoscopy and subject tolerability of procedure.
Role: PI