HIGHLIGHT ON GASTROINTESTINAL TUMORS

Essay

Submitted for Partial Fulfillment of Master Degree in Tropical Medicine

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2016


قَالُوا سُبْحَانَكَ
لاَ عِلْمَ لَنَا
إِلاَّ مَا عَلَّمْتَنَا
إِنَّكَ أَنتَ
الْعَلِيمُ الْحَكِيمُ
صدق الله العظيم
سورة البقرة الآية (٣٢)

Acknowledgement

First and foremost, thanks to "ALLAH" for granting me the power accomplish this work;

I would like to express my endless gratitude and appreciation to ***Professor Dr. Wahid Abd El Monsef*** *Professor of Tropical Medicine Faculty of Medicine, Ain Shams University for giving me the honour of working under his supervision and providing me with a lot of encouragement and support.*

My deepest gratitude and appreciation are to ***Dr. Iman Fawzy Montasser,*** *Lecturer of Tropical Medicine Faculty of Medicine, Ain Shams University for her acceptance to supervise my work for her continuous support, her valuable advice and encouragement.*

Special thanks and gratitude to all my family for their kind guidance and great help during the preparation of the work.

Mary Michel Zekry Iskandarous

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

5-FU	:	5-fluorouracil
^{90}Y	:	yttrium-90
ACs	:	adenocarcinomas
AFAP	:	Attenuated Familial adenomatous polyposis
AFI	:	Autofluorescence imaging
AFP	:	alpha-fetoprotein
AJCC	:	American Joint Committee on Cancer
ALT	:	alanine aminotransferase
AP	:	alkaline phosphatase
APC	:	adenomatous polyposis coli
APE	:	abdominoperineal excision
AST	:	aspartate aminotransferase
BCLC	:	Barcelona Clinic Liver Cancer
BMI	:	body mass index
BRPC	:	‘‘borderline resectable pancreatic cancer’’
BRRS	:	Bannayan–Riley–Ruvalcaba syndrome
BTC	:	Biliary tract cancer
Ca19-9	:	carbohydrate antigen 19-9
CCA	:	cholangiocarcinoma
CE	:	Capsule endoscopy
CEA	:	carcinoembryonic antigen
CEUS	:	Contrast-enhanced ultrasound
CIN	:	chromosomal instability
CLE	:	Confocal laser endomicroscopy
CMT	:	combined modality therapy
CRT	:	Chemoradiotherapy
CTC	:	CT-colonography
CTx	:	chemotherapy
dCC	:	distal cholangiocarcinoma
DEB-TACE	:	drug-eluding bead transcatheter arterial chemoembolization
dMMR	:	defective mismatch repair
DRE	:	digital rectal examination
EASL	:	European Association for the Study of the Liver

LIST OF ABBREVIATIONS

EATL	:	Enteropathy associated T cell intestinal lymphoma
EC	:	Esophageal cancer
ECF	:	epirubicin, cisplatin, and fluorouracil
ECOG-PS	:	performance status according to Eastern Cooperative Group
ECX	:	epirubicin, cisplatin, and capecitabine
EEC	:	Early esophageal cancer
EGD	:	Esophagogastroduodenoscopy
EGFR	:	epidermal growth factor receptor
EMR	:	Endoscopic mucosal resection
EMR	:	endoscopic mucosal resection
EOX	:	epirubicin/oxaliplatin/capecitabine
ERCP	:	endoscopic retrograde cholangiopancreatography
ESCC	:	esophageal squamous cell carcinoma
ESD	:	endoscopic submucosal dissection
ESMO	:	the European Society for Medical Oncology
EUA	:	examination under anaesthesia
EUS-FNA	:	EUS guided fine needle aspiration
FAP	:	Familial adenomatous polyposis
FDA	:	food and drug administration
FIT	:	fecal immunohistochemical testing
FOBT	:	fecal occult blood testing s
FS	:	flexible sigmoidoscopy
GC	:	Gastric cancer
GEJ	:	Gastroesophageal junction
GGT	:	gamma-glutamyl-transpeptidase
GI	:	Gastrointestinal
GISTs	:	gastrointestinal stromal tumors
GIT	:	gastrointestinal tract
H. pylori	:	Helicobacter pylori
HBV	:	Hepatitis B Virus
HCC	:	Hepatocellular carcinoma
HCT	:	haematopoietic cell transplantation
HCV	:	Hepatitis C Virus

LIST OF ABBREVIATIONS

HER-2	:	Human epidermal growth factor receptor 2
HIPEC	:	hyperthermic intraperitoneal chemotherapy
HIV	:	human immunodeficiency virus
HL	:	Hepaticolithiasis
HMPS	:	Hereditary mixed polyposis syndrome
HNPCC	:	hereditary nonpolyposis colorectal cancer
HPV	:	human papillomavirus
IBD	:	Inflammatory Bowel disease
ICC	:	Intrahepatic cholangiocarcinoma
IHC	:	immunohistochemistry
IMRT	:	intensity modulated radiation therapy
IPSID	:	Immunoproliferative small intestinal disease
IVC	:	inferior vena cava
JCCRC	:	Japanese Classification of Colorectal Carcinoma
JGCA	:	The Japanese Gastric Cancer Association
JPS	:	Juvenile polyposis syndrome
LCSGJ	:	the Liver Cancer Study Group of Japan
LVLs	:	Lugol-voiding lesions
MAGIC	:	Medical Research Council Adjuvant Gastric Infusional Chemotherapy
MALT	:	mucosa-associated lymphoid tissue,
MAP	:	MUTYH-associated polyposis
MDCT	:	multidetector CT
MEN-1	:	Multiple endocrine neoplasia type 1
MIE	:	Minimally invasive esophagectomy
MMC	:	mitomycin C
MOSAIC	:	The Multicenter International Study of Oxaliplatin/5-Fluorouracil/Leucovorin in the adjuvant Treatment of Colon Cancer
MRCP	:	magnetic resonance cholangiopancreatography
MRI	:	magnetic resonance imaging
MSI	:	microsatellite instability
MSM	:	men who have sex with men
NAFLD	:	nonalcoholic fatty liver disease

LIST OF ABBREVIATIONS

NASH	:	nonalcoholic steatohepatitis
NBI	:	Narrow band imaging
NCCN	:	The National Comprehensive Cancer Network
NET	:	Neuroendocrine Tumor
NICE	:	National Institute for Health and Clinical Excellence
OLT	:	orthotopic liver transplantation
OS	:	overall survival
PanIN	:	pancreatic intraepithelial neoplasia
PBD	:	Preoperative biliary drainage
PBM	:	pancreaticobiliary maljunction
pCC	:	perihilar cholangiocarcinoma
PE	:	Push Endoscopy
PEG	:	Percutaneous endoscopic gastrostomy
PEI	:	percutaneous ethanol injection
PET	:	Positron emission tomography
PPAP	:	Polymerase proofreading associated polyposis
PS	:	Performance status
PSC	:	primary sclerosing cholangitis
PTBD	:	percutaneous transhepatic biliary drainage
PTC	:	percutaneous transhepatic cholangiography
PTCS	:	percutaneous transhepatic cholangioscopy
PV	:	portal vein
PV	:	portal vein.
PVE	:	Portal vein embolization
QoL	:	quality of life
RCTx	:	chemo-radiation
RFA	:	Radiofrequency ablation
RTx	:	radiation
SCC	:	squamous cell carcinoma
SE	:	Spiral enteroscopy
SEER	:	The Surveillance, Epidemiology and End Results
SEMS	:	Self-expanding metal stents

LIST OF ABBREVIATIONS

SPS	:	Serrated/hyperplastic polyp syndrome
SSA/P	:	sessile serrated adenoma/polyp
TACE	:	transarterial chemoembolization
TAE	:	transarterial embolization
TNM	:	tumor, lymph node, metastasis
TSA	:	traditional serrated adenoma
UGI/SBFT	:	Upper GI series with small bowel follow-through
UICC	:	the International Union Against Cancer
VEGF	:	vascular endothelial growth factor
VEGFR	:	Vascular endothelial growth factor receptor
VIN	:	vulvar intraepithelial neoplasia
WCRF/AICR	:	The World Cancer Research Fund/American Institute for Cancer Research
WHO	:	World Health Organization

Introduction

Gastrointestinal tumors, from the commonly presenting neoplasms of the stomach and large intestine to the rarer lesions within the small intestine, are an area of keen professional interest. Indeed, research in this area generates a considerable body of scientific literature covering the entire spectrum from bench to bedside. Yet gastrointestinal tumors still pose a number of major conceptual and practical challenges. Lesions in the small intestine, for example, often elude early detection and their general symptoms frequently perplex clinicians. **(Fang & Malfertheiner, 2014)**

The epidemiology of digestive cancers is under dynamic changes owing to the changing prevalence and distribution of etiological factors. Colorectal cancer (CRC) incidence in many developing countries, including Asian countries, has increased 2- to 4-fold over the last two decades and has now reached a rate comparable to that of developed countries, with Westernization of diet playing a key role in this trend. Obesity, an increasingly prevalent global health issue, is also expected to become an important risk factor of CRC. **(Wu & Sung, 2013)**

The worldwide incidence and mortality rates of Gastric Cancer (GC) are decreasing, probably caused by increased availability of fresh fruits and vegetables and decreased consumption of salted and preserved foods, reduction in chronic Helicobacter pylori infection, and increased screening activities in some high-risk countries. Nevertheless, GC remains the fourth most common cancer and the second leading cause of cancer death in the world. **(Wu & Sung, 2013)**

Although small bowel polyps and tumors are rare, their incidence has increased significantly over the past 30 years. The relative 'rarity' of these tumors has led to stagnation in the development of effective curative or adjuvant therapies. Thus, the prognosis of most of these tumors is still dismal. Nevertheless, hope is now on the horizon as new methods such as capsule endoscopy and balloon-assisted enteroscopy have contributed to a rise in the diagnosis of these lesions and a diagnosis at earlier stages. **(Fry et al., 2014)**

The majority of GI tumors are epithelial in origin, and most patients present with advanced (regional or distant) disease (~60% patients for colorectal and esophageal cancer) with poor prognosis and low survival rates. Despite

advances in surgery, radiotherapy, and chemotherapy, treatment for most patients is palliative. Indeed, the life expectancy for patients with advanced gastric cancer (with or without chemotherapy) is only 6 to 9 months. **(Yamaguchi et al., 2014)**

Gastrointestinal cancers remain one of the main causes of death in developed countries. The main obstacles to combating these diseases are the limitations of current diagnostic techniques and the low stability, availability, and/or_specificity of pharmacological treatment. **(Prados et al., 2014)**

Our deeper knowledge of the genetics and pathobiology of these tumors has yielded breakthroughs in diagnostic and therapeutic regimens, extending patient survival and improving quality of life. However, there is still much work that needs to be done to improve the prognosis of patients diagnosed with these malignancies. **(Fang & Malfertheiner, 2014)**

AIM OF THE ESSAY

The aim of this essay is to review the recent advances in gastrointestinal tumors and to highlight the current concepts for their prevention, screening, early diagnosis, staging and therapeutic regimens.