

Training in Women's Health Issues in Digestive Diseases

Importance

Women comprise 50.8% of the population (July 2003 Census figures). They make more than 580 million outpatient visits each year to physicians in the United States, which represents 59.6% of all ambulatory visits (CDC, National Ambulatory Medical Care Survey: 2002 Summary). Women make 11,714,000 visits each year to gastroenterologists in the United States, which represents 56.2% of all visits to gastroenterologists (2000 NDTI Data Source). Although many gastrointestinal and liver diseases are the same in women and men, many differences exist that require specific knowledge of gender-based biology and the pathophysiology of digestive diseases in women. Current research has shown that there are gender and cultural differences in the:

1. epidemiology of many gastrointestinal and liver diseases,
2. responses of patients to health and illness,
3. treatment responses and complications, and
4. ability to request and undergo a complete endoscopic evaluation, especially colonoscopy.

Appropriate delivery of subspecialty digestive disease care to women requires up-to-date knowledge of the pathophysiology of both health and disease states in women as well as an understanding of the special issues and concerns of female patients who have digestive diseases.

Pregnancy poses numerous challenges for the gastroenterologist. Recent improvements in therapy have enabled more women with chronic digestive diseases to become pregnant. This in turn has raised new issues regarding their management and treatment. Appropriate delivery of subspecialty care in digestive diseases to women requires an understanding of how gastrointestinal and liver diseases affect fertility and pregnancy and vice versa. Treatment of common problems of pregnancy such as heartburn (present in 80% of pregnant women) requires special knowledge of drug safety and pathophysiology of gastroesophageal reflux disease in pregnancy. Evaluation of potentially serious problems such as abdominal pain in pregnancy requires a special understanding of the causes and time of occurrence of this symptom during pregnancy.

The doctor-patient relationship is an integral part of understanding and caring for patients. This often requires addressing not only physical concerns but also psychosocial, cultural, and religious issues and needs. In addition, the interpersonal relationship between a woman and her physician is unique and different from that between a man and his physician.

Gastroenterologists need to be aware of these gender differences when caring for their female patients.

As recently as 1987, only 13.5% of the budget of the NIH was used to study women's health issues. Until only a decade ago, women were actually excluded from most clinical trials because of fears of pregnancy and potential harm to the fetus and/or that the menstrual cycle or other hormonal changes could skew some results. Results for men were extrapolated to women. Physicians should be aware of this and recognize that much prior research has not accounted for potential gender differences. A notable example in gastroenterology is one major study of the natural history of gallstone disease that principally studied men although the disease primarily affects women. Fortunately, this gender bias in clinical studies was recognized and in 1994, the NIH revised its inclusion policy to meet the NIH Revitalization Act of 1993 that mandated that women and minorities must be included in all of its clinical research studies. To understand health and disease states in women more accurately, researchers must include women in clinical trials, and all clinical trials should have separate analyses by gender.

Goals of Training

The goals of training for gastroenterology fellows in women's health issues can be divided into three broad categories, all of which must be included in level 1 training. No additional training or separate rotation is necessary to fulfill the goals of training. Instead, women's health issues and awareness of gender differences must be incorporated into the overall gastroenterology fellowship. An important feature of this training is the ability to recognize gender differences in the pathophysiology of health and disease states and different responses to treatment.

The gastroenterology fellowship core curriculum should provide all trainees with an understanding of the following topics:

I. General Women's Health Issues

1. Trainees must understand gender differences as they pertain to the doctor-patient relationship. Examples include methods of history-taking, listening, confidentiality, modesty, physical contact, active patient participation in treatment plans, and women's preference for a gender concordant endoscopist.
2. There are cultural and religious differences between men and women and the manner in which health care is perceived and sought after and with which recommendations are complied. Examples include certain cultures

that do not permit a man, including a male physician, to perform an examination on a female patient without the permission of a male family member. In addition, societal differences influence the likelihood of presentation of diseases; for example, men from India with irritable bowel syndrome are more likely to present to physicians for treatment than are Indian women, even though irritable bowel syndrome is more prevalent in females. Trainees should be aware of these cultural differences and should be exposed to cultural training as part of their gastroenterology fellowship.

3. Trainees should understand psychosocial issues as initiating factors in certain disease states, their contribution to ongoing clinical symptoms and pathology, and their impact on evaluation and treatment. Examples include sexual, physical, and emotional abuse and their consequences on gastrointestinal health issues. Trainees should be able to elicit an abuse history during the routine examination. They should have a working knowledge of local resources available for intervention in cases of ongoing abuse.
4. Trainees should recognize there are gender differences as well as changes during pregnancy in normal laboratory values, including liver tests, hematocrit, and creatinine values. They must recognize anatomic gender differences on diagnostic tests and changes in women with age and pregnancy.
5. Trainees should recognize gender differences in disease presentation as well as different thresholds between women and men in seeking medical care. In addition, there are differences in thresholds for pain perception in different disease states as well as among individual patients. For example, patients with irritable bowel syndrome have increased sensitivity for small intestinal and/or colonic distention at lower thresholds than healthy controls.
6. Women remain the major caregivers for their children and their own parents, yet 60.3% of women older than 19 years are now employed at least part time (seasonally adjusted, January 2005 figures). Trainees should be adept at eliciting a history of family, home, and work conflicts and responsibilities and be able to incorporate this understanding of competing demands and the need for flexibility into the treatment plan.

II. Specific Digestive Diseases and Women's Health Issues

1. Trainees should understand gender differences in the normal functioning of the digestive disease tract in health. Trainees should understand the presentation and pathophysiology of all gastrointestinal and hepatic diseases in both women and men. In addition, trainees should

be aware that there are gender differences in the demographics, epidemiology, and pathophysiology of many gastrointestinal tract and liver disorders. One example is irritable bowel syndrome, which is the most common functional gastrointestinal disorder, with a prevalence of 15%–20% in adult Western populations; there is a clear predominance in women, because 70%–80% of patients with irritable bowel syndrome are women. Other examples include chronic constipation, autoimmune disorders, and gender differences in gastrointestinal manifestations of systemic diseases, chronic abdominal and/or pelvic pain, pelvic floor disorders, eating disorders, obesity, endometriosis, osteoporosis, gallstones, and biliary tract and liver diseases such as nonalcoholic steatohepatitis. Trainees must understand the effect of obesity on the gastrointestinal tract and liver function.

Women are less likely to be referred for endoscopic procedures such as screening colonoscopy by their primary care physicians. Moreover, numerous studies have found that colonoscopy is more difficult in women due to a longer, more redundant colon, and the fact that more of the colon lies within the pelvis, as compared to their male counterparts. Colonoscopy is also frequently more difficult posthysterectomy, with lower completion rates in this population. Trainees should understand this and a minimum of 25% of their procedures must be on female patients (see Training Process below).

Women with certain gastrointestinal tract and liver disorders are predisposed to other diseases. In conjunction with the patients' primary physicians, trainees must be able to advise and appropriately screen their otherwise asymptomatic patients for these diseases. Examples include steroid use and osteoporosis, inflammatory bowel disease and colon cancer, primary biliary cirrhosis and breast cancer as well as chronic diseases (including obesity) and nutritional disorders.

Trainees should understand that cancers that affect women, such as breast, ovarian, and uterine cancer, potentially increase a woman's risk of developing colorectal cancer and that the patient should therefore be screened appropriately.

Trainees should understand the psychosocial impact on many of these disorders as well as the effect that chronic disease has on a patient's daily life and that an effective treatment plan often includes a multidisciplinary approach.

2. Trainees should understand the effect of the menstrual cycle and menopause on gastrointestinal tract and liver function in both health and disease. This includes an understanding of estrogen and progesterone and the role

these and other hormones have on gastrointestinal tract and liver function, such as their influence on reflux symptoms and gastrointestinal tract motility. Trainees should understand the potential emotional and physical impact that premenstrual syndrome and menopausal symptoms have on female patients in both health and disease states.

3. Trainees should recognize and understand gender differences in medication pharmacokinetics, differences in prolongation of QT intervals, differences in metabolism and interactions of medications, and differences in the therapeutic response. Evolving areas of research such as gender differences in the absorption and metabolism of medications should be covered. They should understand and be able to anticipate side effects, complications, and interactions of medications that are used for the management of gastrointestinal and liver diseases in women as well as interactions of these medications with those prescribed by nongastroenterologists. Because obesity is more common in women, trainees should recognize the differences that obesity causes in drug metabolism.

III. Pregnancy and Childbearing Issues

1. Trainees should be cognizant of the issues regarding fecundity, fertility, and pregnancy and be able to appropriately advise women with gastrointestinal and liver disorders who desire pregnancy. They should understand the impact that gastrointestinal and liver disorders have on women's ability to become pregnant. Trainees should have a basic knowledge of genetics as it pertains to gastrointestinal and liver disorders and the inheritance risk to the woman's unborn fetus.
2. Trainees should be knowledgeable about the following conditions during pregnancy:
 - a. Gastrointestinal and liver changes and disorders in normal pregnancy
 - b. The impact of gastrointestinal and liver disorders on a woman's ability to carry a healthy baby to term as well as the impact of her pregnancy on her gastrointestinal or liver disorder (e.g., IBD)
 - c. The initial clinical presentation during pregnancy of a gastrointestinal or liver disorder (e.g., gallstones)
 - d. Gastrointestinal and liver disorders that are unique to pregnancy, including, but not limited to, acute fatty liver of pregnancy and HELLP syndrome
 - e. The method of infant delivery that is most appropriate for the mother's disease state (e.g., Cesarean section vs. vaginal delivery in Crohn's disease)
 - f. The risk of maternal-fetal transmission of infectious agents and the appropriate treatment of both the mother and newborn infant
 - g. The different pharmacokinetics and interactions of medications during pregnancy and breast-feeding
 - h. Adequate and appropriate nutrition, including increased vitamin and mineral requirements during pregnancy
 - i. The potential harm to the fetus of medications, sedation, endoscopic procedures, including ERCP, and diagnostic tests, including radiographic tests, (e.g., ultrasound, barium studies, MRI, and CT scanning, and the appropriate use of these during pregnancy)

In general, endoscopic procedures in the pregnant patient are only recommended in situations where not doing the procedure could result in harm to the mother or fetus. Potential indications include life-threatening gastrointestinal bleeding, suspicion of a colonic malignancy, or severe unremitting diarrhea with an unrevealing noninvasive evaluation. Maternal-fetal monitoring should be considered as well as standard patient monitoring. Preprocedure consultation with an obstetrician is recommended and care must be taken to avoid maternal hypoxia and hypotension, both of which are extremely detrimental to the fetus. The ASGE guidelines for endoscopy in pregnant and lactating women recommend the following general principles:

1. Always have a strong indication, particularly in high-risk pregnancies
2. Defer endoscopy to the second trimester whenever possible
3. Use the lowest effective dose of sedative medications
4. Wherever possible, use category A or B drugs
5. Minimize procedure time
6. Position the pregnant patient in the left pelvic tilt or left lateral position to avoid vena caval or aortic compression
7. The presence of fetal heart sounds should be confirmed before sedation is begun and after the endoscopic procedure
8. Obstetric support should be available in the event of a pregnancy-related complication
9. Endoscopy is contraindicated in obstetric complications such as placental abruption, imminent delivery, ruptured membranes, or eclampsia

There are gastrointestinal disorders that are caused or affected by delivery and that manifest themselves immediately in the postpartum period or years afterward that trainees should be able to recognize. Examples include rectal prolapse, urinary and/or fecal incontinence, and hemorrhoids. Trainees should understand the mechanisms and pathophysiology of these disorders and be able to appropriately treat their female patients.

Training Process

All trainees must meet the goals of training in women's health issues in digestive diseases. In order to do this, trainees will need a variety of

teaching and learning experiences that should span the entire period of training. They should be exposed to didactic lectures (which can include CD-ROM and Internet-based programs), case conferences, self-directed learning, selected readings, and clinical experiences that jointly cover all areas discussed above.

It is anticipated that close alliances and consultations with obstetricians and gynecologists will be necessary for adequate training in the issues relating to endometriosis, fertility, pregnancy, and the postpartum period.

A minimum of 25% of the panel of patients who are evaluated and treated by trainees during their clinical experience, including inpatients, outpatients evaluated in the ambulatory continuity clinics, and procedures, must be women. At least one gastroen-

terologist with an interest and experience in women's health issues should be available for the trainees. At institutions where this does not exist, an alternative but less optimal strategy would be for the trainees to receive some or all of this training from nongastroenterologists who focus on women's health issues.

Assessment of Competence

Knowledge of women's health issues in digestive diseases should be assessed as part of the overall evaluation of trainees in gastroenterology during and after the fellowship, as outlined in Overview of Training in Gastroenterology. Questions relating to women's health issues in digestive diseases should be included on the board examination and should reflect a general knowledge of this content.