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Editorial

Dr Abdulrazak Abyad

This is a special issue of the journals with a number of papers from the region in addition to abstracts from the last two sessions of MEAMA of the seventh postgraduate advanced course in geriatrics and gerontology.

Helvaci, Et al., looked at whether Plasma triglycerides and fasting plasma glucose may behave as sensitive acute phase reactants in irritable bowel syndrome. The authors studied consecutive patients with IBS and age and sex-matched control cases were studied. IBS was diagnosed according to Rome II criteria in the absence of red flag symptoms including pain, diarrhea interfering with sleep, weight loss, fever, and any pathologic physical examination finding. The study included 936 patients with IBS (592 females and 344 males) and 346 control cases. Mean age of the patients was 41.0 ± 14.7 (13-86) years. Interestingly, 63.2% of the patients were female. Prevalence of smoking was higher in the patients, significantly (35.2% versus 20.8%, p<0.001). Beside that prevalence of chronic gastritis (CG) (80.4% versus 15.0, p<0.001), antidepressants use (46.4% versus 16.1%, p<0.001), hemorrhoids (37.1% versus 7.2%, p<0.001), and urolithiasis (22.0% versus 9.5%, p<0.001) and mean values of fasting plasma glucose (FPG) (111.9 versus 105.4 mg/dL, p= 0.002) and plasma triglycerides (167.0 versus 147.3 mg/dL, p= 0.013) were all higher in the patients with IBS, significantly. The authors concluded that IBS may be a low-grade inflammatory process initiated with smoking, infections, inflammations, anxiety, depression, sleep disorders, illness fear, cancer fear, and death fear-like stresses, and eventually terminates with dysfunctions of gastrointestinal and genitourinary tracts and elevations of some metabolic parameters. There may be some significant relationships between IBS, smoking, female gender, CG, depression, hemorrhoids, urolithiasis, FPG, and plasma triglycerides. In other words, FPG and plasma triglycerides may behave as sensitive acute phase reactants in IBS.

In another interesting paper Helvaci et al., showed that Umbilical hernia should alert physicians about terminal endpoints of the metabolic syndrome in adults. They studied Consecutive patients with an umbilical hernia and/or a surgical repair history of the umbilical hernia were included into the study. There are 46 patients with the umbilical hernia with a mean age of 62.0 years, and 73.9% of them were female. Body mass index of the hernia group was higher, significantly (33.6 versus 29.1 kg/m2, p= 0.000). Although the prevalence of hypertension (HT) was higher in the hernia group (50.0% versus 27.3%, p<0.01), mean triglycerides and low density lipoproteins were lower in them (p<0.05 for all). Although the prevalences of diabetes mellitus (DM) and coronary heart disease (CHD) were also higher in the hernia patients, the differences were non-significant, probably due to the small sample size of the hernia group. The authors concluded that there may be some significant associations between the umbilical hernia and terminal endpoints of the metabolic syndrome, probably on the bases of prolonged inflammatory, atherosclerotic, and pressure effects of excessive fat tissue on abdominal wall muscles. The inverse relationships between obesity and hypertriglyceridemia and hyperbetalipoproteinemia may be explained by the hepatic fat accumulation, inflammation, and fibrosis induced relatively lost hepatic functions in obese individuals. So the umbilical hernia should alert the physicians about terminal endpoints of the metabolic syndrome including obesity, HT, DM, CHD, cirrhosis, peripheric artery disease, chronic obstructive pulmonary disease, chronic renal disease, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, and cancers in adults.

A review on management of Parkinson disease the use of dopamine agonist was discussed. The authors stressed that Dopamine agonists are also useful first-line medications that may cause less dyskinesia than levodopa/dopa-decarboxylase inhibitors. They are accessible in a once-daily form. Long-term data indicate that there is no statistically significant difference in outcomes between patients initiated on levodopa/dopa-decarboxylase inhibitors and those initiated on dopamine agonists. 6 As time passes, it is becoming more common to utilize a mix of these medications. The drugs available to manage Parkinson's disease include the following: 1-Levodopa & Carbidopa/Levodopa 2- Agonists of Dopamine Receptors Inhibitors of Catechol-O-Methyltransferase (Tolcapone and Entacapone) 4-MAO 5-Anticholinergic 6-Puatative. In this review we present the latest on the use of Dopamine-receptors Agonists.

The Middle East Academy for Medicine of Ageing finished the seventh advanced postgraduate course in geriatrics for the years 2020/2022. The highly successful format of intensive student participation in working groups, giving short presentations and leading discussions, as well as state-of-the-art lectures by experts in the field, will be followed again. The seventh course of the MEAMA, started virtually in Nov-Dec. The second session took place in March and the third session is planned for Sept-Oct, 2021, virtually as well. The fourth session took place in April 2022. This intensive study course composed of four sessions is directed towards physicians, nurses, social workers, and health care officers, responsible for the health care of older people, in addition to faculty members of medical, nursing, social and physiotherapy schools interested in developing the field of geriatrics and gerontology. The course can also be attended by junior potential academic staff, working in other fields (internal medicine, sub-specialties, biology) involving the ageing process and care of elderly people. The complete program aims to increase scientific, clinical, educational and managerial competencies in medical gerontology. Participants that successfully complete the four sessions will receive a postgraduate certificate issued by the Group of Executive Board of the MEAMA. The Middle East Academy for Medicine of Ageing carried the seventh advanced postgraduate course in geriatrics for the years 2020/2022. In the last two sessions there were call for abstracts from previous graduate of MEAMA. The abstract submitted and presented are included in this issue.

Original Contribution / Clinical Investigation

An update on Pathophysiology, Epidemiology, Diagnosis and Management Part 7: Medical Treatment of Early and Advanced Parkinson's Disease: Use of Dopamine Agonist

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ABSTRACT

Dopamine agonists are useful first-line medications that may cause less dyskinesia than levodopa/dopa-decarboxylase inhibitors. They are accessible in a once-daily form. Long-term data indicate that there is no statistically significant difference in outcomes between patients initiated on levodopa/dopa-decarboxylase inhibitors and those initiated on dopamine agonists (6). As time passes, it is becoming more common to utilize a mix of these medications. The drugs available to manage Parkinson's disease include the following: 1-Levodopa & Carbidopa/Levodopa 2- Agonists of Dopamine Receptors Inhibitors of Catechol-O-Methyltransferase (Tolcapone and Entacapone) 4-MAO 5-Anticholinergic 6-Puatative. In this review we present the latest on the use of Dopamine-receptors Agonists.

Key words: Medical Treatment of Early and Advanced Parkinson's Disease, Use of Dopamine Agonist

Dopamine agonists

Dopamine agonists stimulate the postsynaptic dopamine D1–3 receptors in the striatum directly, without requiring further metabolism within dopaminergic neurons. Dopamine agonists are not as efficient as levodopa at reversing motor symptoms but are associated with a decreased risk of dyskinesia; they may be taken alone or in combination with levodopa in the early stages of the disease. Similar to levodopa, the adverse effects include leg oedema, increased impulse control difficulties, and excessive daytime sleepiness. Ropinirole and pramipexole are taken orally and come in immediate and extended release forms. Rotigotine is delivered once daily via transdermal patch. Apomorphine, which has a brief duration of action, can be given subcutaneously as an injection for acute OFF episodes or as a continuous infusion to minimize motor fluctuations in advanced Parkinson's disease (1). Other formulations of apomorphine are also being explored, including inhaled (VR040) (2) and sublingual (APL-130277) (3) forms.

Numerous dopamine agonists have been developed with variable degrees of affinity for various dopamine receptors. In the United States, historical and current DAs include the following:

- **Bromocriptine (Parlodel®)**
- **Pergolide (Permax®)**
- **Pramipexole (Mirapex®, Mirapex ER**
- **Ropinirole (Requip®, Requip XL®)**
- **Rotigotine (Neupro® patch)**
- **Apomorphine (Apokyn® injection)**

These dopamine agonists exist in three forms including oral, transdermal and injection (Table 1).

Table 1. Dopamine Agonists for the Treatment of Parkinson's Disease

Medication	Available Doses	Initial Dosing	Target Maintenance Dose
Apomorphine HCl (Apokyn injection)	0.02-0.06 mL	0.02 mL during "off" periods	3-6 mg three times per day
Rotigotine transdermal system (Neupro)	2 mg every 24 hours 4 mg every 24 hours 6 mg every 24 hours	One 2-mg patch per day	4-6 mg every 24 hours
Bromocriptine	2.5mg 5mg	1.25 mg q12h initially may increase dose by 2.5 mg/day q2-4Weeks until optimal therapeutic response achieved	Up to maximum of 15 mg/day
Pramipexole (Mirapex)	0.125 mg 0.25 mg 0.5 mg 1 mg 1.5 mg	0.125 mg three times per day	1.5-4.5 mg/day
Ropinirole (Requip)	0.25 mg 0.5 mg 1 mg 2 mg 3 mg 4 mg	0.25 mg twice daily	5 mg twice daily

Oral Agents

Three oral dopamine-receptor agonists are available for the treatment of PD: an older agent, bromocriptine (Parlodel, Novartis), and two newer, more selective compounds, ropinirole (Requip, GlaxoSmithKline) and pramipexole (Mirapex, Pfizer). Another agent, pergolide (Permax, Valeant; Par, Teva), was removed from the market in 2007.

Bromocriptine (Parlodel®) and Pergolide (Permax®) were created in the 1970s and were both produced from the ergot plant (fungus). When it was established that pergolide can induce faulty heart valves in a significant minority of users, the FDA judged that the danger outweighed the benefit and pulled it from the market in the United States for treatment in PD in March 2007. Bromocriptine, the first DA to achieve commercial success, is still accessible for various medicinal purposes.

Bromocriptine, an ergot derivative, is a strong agonist of dopamine D2 receptors and a partial antagonist of D1 receptors. It is available in 2.5 mg tablet and 5 mg capsule dosage forms. It has been used in combination with carbidopa/levodopa (Sinemet) to alleviate symptoms and mitigate the deleterious effects of long-term levodopa medication. Bromocriptine is still accessible, however it is less efficient than other dopamine agonists in the early stages of Parkinson's disease and is ineffective at reducing motor fluctuations generated by levodopa in late-stage PD.

Ropinirole and pramipexole. These two agents have selective activity at D2 class sites (specifically at the D2 and D3 receptor proteins) and little or no activity at D1 class sites.
The FDA approved pramipexole (Mirapex®) and ropinirole (Requip®) in 1997 and are currently the most commonly used DAs. Neither of these dopamine agonists is ergot-derived, and neither has been linked to heart valve problems. They are both effective in the early stages of Parkinson's disease (PD) and serve a critical role in reducing motor fluctuations, despite the fact that they have a higher rate of adverse effects than levodopa.

These medications, like bromocriptine, are readily absorbed when taken orally and have similar therapeutic effects. They, like levodopa, can alleviate PD's clinical symptoms. Dopamine agonists have a longer duration of action (8 to 24 hours) than levodopa (6 to 8 hours), making them particularly effective in treating on/off phenomena. All three medications may also cause hallucinations or confusion, similar to those seen with levodopa, and may exacerbate orthostatic hypotension (5).

While these agents' therapeutic effects are mediated by their actions on postsynaptic dopamine receptors, they can also activate presynaptic autoreceptors found on dopamine terminals, the majority of which are of the D2 class. Pramipexole and ropinirole may reduce endogenous dopamine production and release it by stimulating presynaptic receptors, thereby alleviating oxidative stress.

To achieve clinically significant maintenance doses of ropinirole and pramipexole, several weeks are required (5). While these agents generally cause less GI disturbance than bromocriptine, they can cause nausea and somnolence. The somnolence may be severe, and sudden attacks of irresistible sleepiness have been reported to result in motor vehicle accidents (6).

The introduction of pramipexole and ropinirole significantly altered the clinical use of dopamine agonists in Parkinson's disease. Due to their tolerability, these selective agonists are increasingly used as first-line therapy for Parkinson's disease rather than as adjuncts to levodopa. This change was prompted by two factors: (1) dopamine agonists have a longer duration of action and are therefore less likely than levodopa to cause on/off effects and dyskinesias; and (2) levodopa may contribute to oxidative stress, thereby accelerating the loss of dopaminergic neurons.

In two large controlled clinical trials comparing levodopa to pramipexole or ropinirole as an initial therapy for Parkinson's disease, it was observed that patients receiving these agonists had a lower rate of motor fluctuation (7,8). However, in both studies, this benefit was associated with an increased rate of adverse events, most notably somnolence and hallucinations (7,8). Numerous specialists now recommend dopamine agonists as first-line treatment in patients with early Parkinson's disease and in younger patients to alleviate motor fluctuations and dyskinesia. Levodopa should be used first in older patients, who may be more susceptible to the dopamine agonists' adverse cognitive effects.

Adverse effects (ropinirole). In early PD trials, the most frequently observed adverse events were nausea, dizziness, somnolence, headache, vomiting, syncope, fatigue, dyspepsia, viral infection, constipation, pain, increased sweating, asthenia, dependent or leg edema, orthostatic symptoms, abdominal pain, pharyngitis, confusion, hallucinations, urinary tract infections, and abnormal viscosity (9).

In advanced PD trials, the most frequently observed adverse events in more than 5% of patients were dyskinesias, nausea, dizziness, aggravated parkinsonism, somnolence, headache, insomnia, injury, hallucinations, falls, abdominal pain, upper respiratory infection, confusion, increased sweating, vomiting, viral infection, an elevated drug level, arthralgia, tremor, and an elevated drug level (9).

Adverse effects (pramipexole): In placebo-controlled trials of early Parkinson's disease, the most frequently observed adverse events were nausea, dizziness, somnolence, insomnia, constipation, asthenia, and hallucinations. The most frequently reported adverse events that resulted in treatment discontinuation were nervous system-related (hallucinations, dizziness, somnolence, extrapyramidal syndrome, headache, and confusion) and gastrointestinal symptoms (e.g., nausea) (10).

Postural hypotension, dyskinesia, extrapyramidal syndrome, insomnia, dizziness, hallucinations, accidental injury, dream abnormalities, confusion, constipation, asthenia, somnolence, dystonia, gait abnormality, hypertonia, dry mouth, amnesia, and urinary frequency were the most frequently observed adverse events in patients with advanced PD who received pramipexole and concomitant levodopa (10).

Transdermal Patch

Rotigotine (Neupro®), the most recently approved dopamine agonist, was approved by the FDA in 2007 for use as a once-daily transdermal (skin) patch that is changed every 24 hours (11). It is just as effective as the oral DAs pramipexole and ropinirole, according to clinical research. Neupro is the first once-daily dopamine agonist patch that is non-ergolinic and provides stable, continuous drug delivery 24 hours a day (12). The therapeutic benefits are age, sex, and race insensitive. The patch is available in three strengths: 2 mg every 24 hours, 4 mg every 24 hours, and 6 mg every 24 hours.

Adverse effects. In clinical trials, nausea, application-site reactions, somnolence, dizziness, headache, vomiting, and insomnia were frequently reported adverse events. Additionally, peripheral edema, fluid retention, hallucinations, symptomatic orthostatic hypotension, weight gain, elevated heart rate, elevated blood pressure, and syncope were reported as adverse effects (13). Despite the agent's benefits, the manufacturer informed health providers and patients that the patch would be unavailable in pharmacies in the United States by the end of April 2008. The recall was initiated in response to reports of possible decreased clinical performance due to the formation of rotigotine crystals in the patches, resulting in decreased drug absorption through the skin and the possibility of decreased efficacy. Neupro® was revamped and reintroduced in 2012, with daily doses of 1, 2, 3, 4, 6, and 8 mg.

An Injectable Medication

Apomorphine (Apokyn®) was first tried to treat Parkinson's disease in 1950, but it was accompanied with a number of adverse effects, most notably nausea and vomiting. It was reintroduced in the 1990s in a more palatable formulation and has found a special niche as a self-injectable "rescue" medication for persons with advanced Parkinson's disease and severe "off" episodes (14). Its short half-life (about 40 minutes) and chemical structure make oral administration problematic, if not impossible. In individuals experiencing severe "off" reactions, in which crippling bradykinesia and rigidity impair function, a self-injected dose of Apokyn® can reverse the "off" period within minutes and bridge the gap of one to two hours between levodopa doses. In the early phase of treatment, an anti-nausea medicine (often trimethobenzamide or Tigan®) is required prior to injection but can be withdrawn after the first week or two. Apokyn® can be administered as a rescue agent up to five times per day. Each person's response to Apokyn® is unique.

Apomorphine HCl (Mylan/Bertek) is a subcutaneously injected dopaminergic agonist with a rapid onset of action. It has a high affinity for D4 receptors, a moderate affinity for D2, D3, and D5 receptors, and a low affinity for adrenergic 1D, 2B, and 2C receptors. It is approved as a rescue therapy for the acute intermittent treatment of "off" episodes in patients receiving dopaminergic therapy who have a fluctuating response. Apomorphine can be injected into the muscles if they become frozen and the patient is unable to rise from a chair or perform routine tasks. As-needed injections may allow for dose reductions of other anti-PD medications. This may help to reduce the risk of experiencing adverse effects such as twitching and other uncontrollable movements.

Adverse consequences. Apart from the other potential side effects associated with dopamine receptor agonists, apomorphine is extremely emetic and can result in QT prolongation, injection site reactions, hallucinations, dyskinesia, and abnormal behavior (15). Trimethobenzamide (Tigan, King), an oral antinausea and antiemetic, is recommended to be started three days before the initial apomorphine dose and continued for at least the first two months of therapy. Apomorphine should not be used in conjunction with serotonin (5-HT3) antagonist antiemetic medications due to reports of profound hypotension and loss of consciousness when ondansetron (Zofran, GlaxoSmithKline) and apomorphine are combined (16).

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Plasma triglycerides and fasting plasma glucose may behave as sensitive acute phase reactants in irritable bowel syndrome

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ABSTRACT

Background: Irritable bowel syndrome (IBS) may be found among the most common causes of recurrent upper abdominal discomfort in the general population, nowadays.

Method: Consecutive patients with IBS and age and sex-matched control cases were studied. IBS was diagnosed according to Rome II criteria in the absence of red flag symptoms including pain, diarrhea interfering with sleep, weight loss, fever, and any pathologic physical examination finding.

Results: The study included 936 patients with IBS (592 females and 344 males) and 346 control cases. Mean age of the patients was 41.0 ± 14.7 (13-86) years. Interestingly, 63.2% of the patients were female. Prevalence of smoking was higher in the patients, significantly (35.2% versus 20.8%, p<0.001). Beside that prevalences of chronic gastritis (CG) (80.4% versus 15.0, p<0.001), antidepressants use (46.4% versus 16.1%, p<0.001), hemorrhoids (37.1% versus 7.2%, p<0.001), and urolithiasis (22.0% versus 9.5%, p<0.001) and mean values of fasting plasma glucose (FPG) (111.9 versus 105.4 mg/dL, p= 0.002) and plasma triglycerides (167.0 versus 147.3 mg/dL, p= 0.013) were all higher in the patients with IBS, significantly.

Conclusion: IBS may be a low-grade inflammatory process initiated with smoking, infections, inflammations, anxiety, depression, sleep disorders, illness fear, cancer fear, and death fear-like stresses, and eventually terminates with dysfunctions of gastrointestinal and genitourinary tracts and elevations of some metabolic parameters. There may be some significant relationships between IBS, smoking, female gender, CG, depression, hemorrhoids, urolithiasis, FPG, and plasma triglycerides. In other words, FPG and plasma triglycerides may behave as sensitive acute phase reactants in IBS.

Key words: Irritable bowel syndrome, smoking, triglycerides, fasting plasma glucose, acute phase reactants, chronic endothelial damage, atherosclerosis

Introduction

Recurrent upper abdominal discomfort may be the cause of nearly half of applications to Internal Medicine Polyclinics (1). Although gastroesophageal reflux disease, esophagitis, duodenal and/or gastric ulcers, erosive gastritis and/or duodenitis, celiac disease, chronic pancreatitis, and malignancies are found among possible causes, irritable bowel syndrome (IBS) and chronic gastritis (CG) may be two of the most commonly diagnosed disorders among all. Flatulence, periods of diarrhea and constipation, repeated toilet visits due to urgent evacuation or early filling sensation, excessive straining, feeling of incomplete evacuation, frequency, urgency, reduced feeling of well-being, and eventually disturbed social life are often reported by the patients with IBS. Although many patients relate onset of symptoms to intake of food, and often incriminate specific food items, a meaningful dietary role is doubtful in IBS. According to literature, nearly 20% of general population have IBS, and it is more common in female gender with unknown causes, yet (2). Psychological factors seem to precede onset and exacerbation of gut symptoms, and many potentially psychiatric disorders including anxiety, depression, sleep disorders, illness fear, cancer fear, or death fear usually coexist with IBS (3). For instance, thresholds for sensations of initial filling, evacuation, urgent evacuation, and utmost tolerance recorded via a rectal balloon significantly decreased by focusing the examiners' attention on gastrointestinal stimuli by reading pictures of gastrointestinal malignancies in the patients with IBS (4). In other words, although IBS is described as a physical disorder according to Rome II guidelines, psychological factors may be crucial for triggering of these physical changes in the body. IBS is actually defined as a brain-gut dysfunction according to the Rome II criteria, and it may have more complex mechanisms affecting various systems of the body via a low-grade inflammatory process (5). Eventually, IBS may even terminate with CG, urolithiasis, and hemorrhoids (6-8). Similarly, some authors studied the role of inflammation in IBS via colonic biopsies in 77 patients (9). Although 38 patients had normal histology, 31 patients demonstrated microscopic inflammation, and eight patients fulfilled criteria for lymphocytic colitis. However, immunohistology revealed increased intraepithelial lymphocytes as well as increased CD3 and CD25 positive cells in lamina propria of the group with "normal" histology. These features were more evident in the microscopic inflammation group who additionally revealed increased neutrophils, mast cells, and natural killer cells. All of these immunopathological abnormalities were the most evident in the lymphocytic colitis group who also demonstrated HLA-DR staining in the crypts and increased CD8 positive cells in the lamina propria (9). A direct link between the immunologic activation and IBS symptoms was shown by some other authors, too (10). They demonstrated not only an increased mast cell degranulation in the colon but also a direct correlation between proximity of mast cells to neuronal elements and severity of pain in IBS (10). In addition to the above findings, there is some evidences for extension of the inflammatory process behind the mucosa. Some authors addressed this issue in ten patients with severe IBS by examining full-thickness jejunal biopsies obtained via laparoscopy (11). They detected a low-grade infiltration of lymphocytes in myenteric plexus of nine patients, four of whom had an associated increase in intraepithelial lymphocytes and six demonstrated evidence of neuronal degeneration (11). Nine patients had hypertrophy of longitudinal muscles, and seven had abnormalities in number and size of interstitial cells of Cajal (11). The finding of intraepithelial lymphocytosis was consistent with some other reports in the colon (9) and duodenum, too (12). On the other hand, smoking is a well-known cause of chronic endothelial inflammation terminating with an accelerated atherosclerosis-induced end-organ insufficiencies all over the body (13). We tried to understand whether or not there are some significant relationships between IBS, smoking, and some metabolic parameters in the present study.

Material and methods

The study was performed in the Internal Medicine Polyclinic of the Dumlupinar University between August 2005 and March 2007. Consecutive patients with upper abdominal discomfort were taken into the study. Their medical histories including smoking habit, alcohol consumption, urolithiasis, and already used medications including antidepressants at least for a period of six-month were learned. Patients with devastating illnesses including eating disorders, malignancies, acute or chronic renal failure, cirrhosis, hyper- or hypothyroidism, and heart failure were excluded. Current daily smokers at least for six-months and cases with a history of five pack-year were accepted as smokers. Patients with regular alcohol consumption (one drink a day) were accepted as drinkers. A routine check up procedure including fasting plasma glucose (FPG), total cholesterol (TC), triglycerides, high-density lipoprotein (HDL), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), albumin, creatinine, thyroid function tests, hepatic function tests, markers of hepatitis A, B, C, and human immunodeficiency viruses, urinalysis, a posterior-anterior chest x-ray graphy, an electrocardiogram, a Doppler echocardiogram in case of requirement, an abdominal ultrasonography, an abdominal x-ray graphy in supine position, rectosigmoidoscopy in patients symptomatic for hemorrhoids, and a questionnaire for IBS was performed. IBS was diagnosed according to Rome II criteria in the absence of red flag symptoms including pain, diarrhea interfering with sleep, weight loss, fever, and any pathologic physical examination finding. An upper gastrointestinal endoscopy was performed, and sample biopsies were taken in case of requirement. CG is diagnosed histologically. Although microscopic examination may also show stereotypical changes in epithelium such as degeneration, focal intestinal metaplasia, dysplasia, and glandular atrophy, infiltrations of neutrophils and monocytes into the gastric mucosa is the hallmark of CG (14). An additional intravenous pyelography was performed according to the results of the urinalysis and abdominal x-ray graphy. So urolithiasis was diagnosed either by medical history or as a result of current clinical and laboratory findings. Body mass index (BMI) of each case was calculated by measurements of Same Physician instead of verbal expressions. Weight in kilograms is divided by height in meters squared (15). Cases with an overnight FPG level of 126 mg/dL or greater on two occasions or already using antidiabetic medications were defined as diabetic. An oral glucose tolerance test with 75-gram glucose was performed in cases with FPG levels between 100 and 126 mg/dL, and diagnosis of cases with 2-hour plasma glucose levels of 200 mg/dL or greater is diabetes mellitus (DM) (15). Office blood pressure (OBP) was checked after a 5-minute of rest in seated position with mercury sphygmomanometer on three visits, and no smoking was permitted during the previous 2-hours.

Ten-day twice daily measurements of blood pressure at home (HBP) were obtained in all cases, even in normotensives in the office due to the risk of masked hypertension after an education about proper blood pressure (BP) measurement techniques (16). The education included recommendation of upper arm devices, using a standard adult cuff with bladder sizes of 12 x 26 cm for arm circumferences up to 33 cm in length and a large adult cuff with bladder sizes of 12 x 40 cm for arm circumferences up to 50 cm in length, and taking a rest for a period of 5-minute in seated position before measurements. An additional 24-hour ambulatory blood pressure monitoring was not required due to the equal efficacy of the method with HBP measurements to diagnose hypertension (HT) (17). HT is defined as a mean BP of 140/90 mmHg or greater on HBP measurements, and white coat hypertension (WCH) is defined as an OBP of 140/90 mmHg or greater, but a mean HBP value of lower than 140/90 mmHg (16). Eventually, all patients with IBS were collected into the first and age and sex-matched control cases were collected into the second groups. Mean values of BMI, FPG, TC, triglycerides, HDL, and low-density lipoprotein (LDL) and prevalences of smoking, CG, antidepressants use, hemorrhoids, urolithiasis, WCH, HT, and DM were detected in each group and compared in between. Mann-Whitney U test, Independent-Samples T test, and comparison of proportions were used as the methods of statistical analyses.

Results

The study included 936 patients with the IBS (592 females and 344 males) and 346 control cases. Mean age of the patients was 41.0 ± 14.7 (13-86) years. Interestingly, 63.2% of the patients were female. Prevalence of smoking was higher in the patients with IBS, significantly (35.2% versus 20.8%, p<0.001). Beside that prevalences of CG (80.4% versus 15.0, p<0.001), antidepressants use (46.4% versus 16.1%, p<0.001), hemorrhoids (37.1% versus 7.2%, p<0.001), and urolithiasis (22.0% versus 9.5%, p<0.001) and mean values of FPG (111.9 versus 105.4 mg/dL, p= 0.002) and plasma triglycerides (167.0 versus 147.3 mg/dL, p= 0.013) were all higher in the patients with IBS (Table 1). Due to the limited number of cases with alcoholism among the study cases, regular alcohol consumption was not included in comparison.

Table 1: Comparison of patients with irritable bowel syndrome and control cases

Variables	Patients with IBS*	*p*-value	Control cases
Number	936		346
Mean age (year)	*41.0 ± 14.7 (13-86)*	Ns†	41.4 ±14.4 (15-82)
Female ratio	*63.2%*	Ns	63.0%
Smoking	*35.2%*	*<0.001*	*20.8%*
Chronic gastritis	*80.4%*	*<0.001*	*15.0%*
Antidepressants use	*46.4%*	*<0.001*	*16.1%*
Hemorrhoids	*37.1%*	*<0.001*	*7.2%*
Urolithiasis	*22.0%*	*<0.001*	*9.5%*
Mean BMI‡ (kg/m2)	27.2 ±5.6 (15.0-51.1)	Ns	27.7 ±5.9 (16.5-49.0)
WCH§	27.7%	Ns	31.4%
HT‖	12.8%	Ns	14.7%
*Mean FPG** (mg/dL)*	*111.9 ± 42.8 (66-392)*	*0.002*	*105.4 ± 32.9 (70-323)*
DM***	8.3%	Ns	10.0%
Mean TC**** (mg/dL)	199.8 ±43.9 (105-352)	Ns	196.5 ±43.6 (110-296)
Mean triglycerides (mg/dL)	*167.0 ± 106.5 (20-622)*	*0.013*	*147.3 ± 102.9 (27-857)*
Mean LDL***** (mg/dL)	125.4 ±35.8 (10-282)	Ns	124.0 ±32.5 (54-231)
Mean HDL****** (mg/dL)	46.6 ±13.5 (24-124)	Ns	45.0 ±10.3 (26-72)

*Irritable bowel syndrome †Nonsignificant (p>0.05) ‡Body mass index §White coat hypertension ‖Hypertension
**Fasting plasma glucose ***Diabetes mellitus ****Total cholesterol *****Low-density lipoprotein
******High-density lipoprotein

Discussion

Smoking-induced vasculitis may be the second common vasculitis just after obesity in the world. It is a major risk factor for the development of atherosclerotic end-organ insufficiencies including coronary heart disease (CHD), peripheric artery disease (PAD), chronic obstructive pulmonary disease (COPD), cirrhosis, chronic renal disease (CRD), and stroke (13, 18). Its atherosclerotic effect is the most obvious in Buerger's disease. Buerger's disease is an obliterative vasculitis characterized by inflammatory changes in small and medium-sized arteries and veins, and it has never been documented in the absence of smoking in the literature. Although the well-known strong atherosclerotic effects of smoking, some studies reported that smoking in human being and nicotine administration in animals are associated with lower BMI values (19). Some evidences revealed an increased energy expenditure during smoking both on rest and light physical activity (20), and nicotine supplied by patch after smoking cessation decreased caloric intake in a dose-related manner (21). According to an animal study, nicotine may lengthen intermeal time and simultaneously decreases amount of meal eaten (22). Additionally, BMI seems to be the highest in the former, the lowest in the current and medium in never smokers (23). Smoking may be associated with postcessation weight gain but evidences suggest that risk of weight gaining is the highest during the first year after quitting and decreases with the following years (24). Similarly, although CHD was detected with similar prevalence in both genders, prevalence of smoking and COPD were higher in males with the CHD against the higher values of BMI, LDL, and triglycerides and higher prevalences of WCH, HT, and DM in females (25). This result may indicate both the strong atherosclerotic and weight decreasing roles of smoking (26). Similarly, the incidence of a myocardial infarction is increased six-fold in women and three-fold in men who smoked at least 20 cigarettes per day (27). In other words, smoking may be more harmful for women regarding the atherosclerotic end-points probably due to the greater BMI and its consequences in the females. Similarly, smoking is consistently higher in men in the literature (18). So smoking is probably a powerful atherosclerotic risk factor with some suppressor effects on appetite. On the other hand, smoking-induced weight loss may be related with the chronic vascular endothelial inflammation all over the body, since loss of appetite is one of the chief symptoms of disseminated inflammation in the body. Clinicians can even understand healing of patients by means of normalizing appetite. Several toxic substances found in cigarette smoke get into the circulation via the respiratory tract, and cause a vascular endothelial inflammation until the clearence from the circulation. But due to the repeated smoking habit of the individuals, the clearence process never terminates. So the patients become ill with loss of appetite, permanently. In another definition, smoking-induced weight loss is an indicator of being ill instead of being healthy (21-23). After smoking cessation, appetite normalizes with a prominent weight gain but the returned weight is their normal and physiological weight, actually. On the other hand, there may be several underlying mechanisms terminating with the IBS in smokers. First of all, smoking-induced chronic vascular endothelial inflammation may disturb epithelial functions for absorption and excretion in the gastrointestinal and genitourinary tracts. These functional problems may terminate with the symptoms and components of IBS including loose stool, diarrhea, constipation, and urolithiasis. Secondly, diarrheal losses-induced urinary changes may even cause urolithiasis (6, 7). Thirdly, smoking-induced sympathetic nervous system activation may cause motility disorders in the gastrointestinal and genitourinary tracts. Fourthly, smoking-induced loss of appetite may terminate with obstipation. Finally, immunosuppression secondary to smoking-induced chronic vascular endothelial inflammation may even terminate with gastrointestinal and genitourinary tract infections causing loose stool, diarrhea, and urolithiasis since some types of bacteria can provoke urinary supersaturation and modify the environment to form crystal deposits in the urine. In fact, 10% of urinary stones are struvite stones which are built by magnesium ammonium phosphate produced during infection with bacteria that possess the enzyme, urease. Similarly, prevalence of urolithiasis was higher in the patients with IBS in the present study, significantly (22.0% versus 9.5%, $p<0.001$).

Chronic endothelial damage may be the major underlying cause of aging and death by causing end-organ insufficiencies in human being (28). Much higher BP of the afferent vasculature may be the major accelerating factor by causing recurrent injuries on vascular endothelial cells. Probably, whole afferent vasculature including capillaries are mainly involved in the process. Therefore the term of venosclerosis is not as famous as atherosclerosis in the literature. Due to the chronic endothelial damage, inflammation, edema, and fibrosis, vascular walls thicken, their lumens narrow, and they lose their elastic natures, those eventually reduce blood supply to the terminal organs, and increase systolic and decrease diastolic BP further. Some of the well-known accelerating factors of the inflammatory process are physical inactivity, sedentary lifestyle, excess weight, animal-rich diet, smoking, alcohol, chronic inflammations, prolonged infections, and cancers for the development of terminal consequences including obesity, HT, DM, cirrhosis, PAD, COPD, CHD, CRD, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, early aging, and premature death (29). Although early withdrawal of the accelerating factors can delay terminal consequences, after development of HT, DM, cirrhosis, COPD, CRD, CHD, PAD, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, and aging, endothelial changes can not be reversed completely due to their fibrotic natures. The accelerating factors and terminal consequences are researched under the titles of metabolic syndrome, aging syndrome, or accelerated endothelial damage syndrome in the literature, extensively (30, 31).

Obesity may be found among one of the terminal consequences of the metabolic syndrome because after development of obesity, nonpharmaceutical approaches provide limited benefit either to heal obesity or to prevent its complications. Excess weight may cause a chronic low-grade inflammation on vascular endothelium, and risk of death from all causes including cardiovascular diseases and cancers increases parallel to the range of excess weight in all age groups (32). The low-grade chronic inflammatory process may even cause genetic changes on the epithelial cells, and the systemic atherosclerotic process may decrease clearance of malignant cells by the immune system. The effects of excess weight on BP were shown in the literature, extensively (33). For example, incidence of sustained normotension (NT) was higher in the underweight (80.3%) than the normal weight (64.0%, $p<0.05$) and overweight groups (31.5%, $p<0.05$),

(31.5%, $p<0.05$), significantly, and 52.8% of cases with HT had obesity against 14.5% of cases with the NT ($p<0.001$) (34). So the dominant triggering cause of the metabolic syndrome appears as weight gain, which is probably the main cause of insulin resistance, hyperlipoproteinemias, impaired fasting glucose, impaired glucose tolerance, and WCH via the chronic low-grade inflammation on vascular endothelium all over the body (35). Prevention of the weight gain with physical activity, even in the absence of a prominent weight loss, will probably result with resolution of many parameters of the syndrome (36-39). But according to our experiences, excess weight may actually be a consequence of physical inactivity instead of an excessive eating habit, thus prevention of weight gain can not be achieved by diet, alone (40). Additionally, limitation of excess weight as an excessive fat tissue around abdomen under the heading of abdominal obesity is meaningless, instead it should be defined as overweight or obesity via the BMI since adipocytes function as an endocrine organ, and they produce a variety of cytokines and hormones all over the body (35). The eventual hyperactivities of sympathetic nervous system and renin-angiotensin-aldosterone system are probably associated with chronic endothelial inflammation, insulin resistance, and elevated BP values. Similarly, the Adult Treatment Panel (ATP) III reported that although some people classified as overweight with larger muscular masses, most of them also have excessive fat tissue predisposing to HT, DM, CHD, and stroke-like terminal end-points of the metabolic syndrome, actually (15).

Although ATP II determined the normal triglycerides values as lower than 200 mg/dL (41), WHO in 1999 (42) and ATP III in 2001 (14) reduced the normal limits as lower than 150 mg/dL. Although these values are usually used to define borders of the metabolic syndrome, whether or not much more lower limits can provide additional benefits for human health is unclear. In a previous study (43), patients with the triglycerides values lower than 60 mg/dL were collected into the first, lower than 100 mg/dL into the second, lower than 150 mg/dL into the third, lower than 200 mg/dL into the fourth, and 200 mg/dL and higher were collected into the fifth groups, respectively. Prevalence of smoking was the highest in the fifth group which may also indicate a close relationship between smoking and hypertriglyceridemia in the metabolic syndrome (43). The body weight also increased progressively from the first towards the fifth groups, parallel to the increased values of plasma triglycerides (43). Interestingly, prevalences of HT, DM, and CHD showed their most significant increases after the triglycerides value of 100 mg/dL (43). As an opinion of us, significantly increased triglycerides values by aging may be secondary to aging-induced decreased physical and mental activities those eventually terminate with obesity and its consequences. Interestingly, the mean age increased from the lowest triglycerides containing group up to the group with triglycerides values of lower than 200 mg/dL, gradually, then decreased. The similar trend was also observed with LDL, BMI, and WCH. These trends may be due to the fact that although the borderline high triglycerides values (150-199 mg/dL) is seen together with physical inactivity, overweight, obesity, DM, CRD, smoking, and alcohol-like acquired causes, the high triglycerides (200-499 mg/dL) and very high triglycerides values (500 mg/dL or higher) may actually be secondary to both acquired and genetic causes (15). But although the underlying causes of the high and very high triglycerides values may be a little bit different, probably risks of the terminal end-points of the metabolic syndrome do not change in these groups. For example, prevalence of HT and DM were the highest in the highest triglycerides containing group in the above study (43). Eventually, although some authors reported that lipid assessment in cardiovascular diseases can be simplified by the measurements of TC and HDL without the need of triglycerides (44), the present study and most of the others indicated causal associations between triglycerides-mediated pathways and the metabolic syndrome (45, 46). Similarly, another study indicated a significant relationship between higher triglycerides values and CHD in Western populations, too (47).

The acute phase response is a facet of the innate immune system that occurs in response to infections, infarctions, foreign bodies, autoimmune disorders, allergies, neoplasms, traumas, or burns-like various stresses of the body. Certain mediators known as acute phase reactants (APR) are increased or decreased during the acute phase response (48, 49). These markers are commonly measured in clinical practice as indicators of acute illnesses. The terms of acute phase proteins and APR are usually used synonymously, although some APR are polypeptides rather than proteins. An acute phase reaction classically presents with fever, tachycardia, and leukocytosis. Positive APR are those whose concentrations increase with inflammations. Negative APR are those whose concentrations decrease during an acute phase response. The acute phase response is predominantly mediated by the pro-inflammatory cytokines including TNF, IL-1, and IL-6 secreted by immune cells. In case of inflammations, infections, and tissue damages, neutrophils and macrophages release such cytokines into the circulation. The liver and some other organs respond by producing many positive APR to them. Some of the well-known positive APR are CRP, ESR, fibrinogen, ferritin, procalcitonin, hepcidin, haptoglobin, ceruloplasmin, complement proteins, and serum amyloid A. CRP is involved in innate immunity, and responsible for activating the complement pathway. Serum CRP rises rapidly, with a maximal concentration reached within two days, and falls quickly once the inflammation has resolved. Measurement of CRP is a useful indicator of inflammations in clinic. It correlates with ESR, but not always directly. This is due to the ESR being largely dependent on elevation of fibrinogen with a half-life of approximately one week. Therefore ESR remains higher for a longer period of time despite the removal of the inflammatory stimulus. Whereas CRP rises with a half-life of 6-8 hours, rapidly and then returns to normal in case of a successful treatment, quickly. On the other hand, productions of some other APR are suppressed at the same time which are called as negative APR. Some of the well-known negative APR are albumin, transferrin, retinol-binding protein, antithrombin, transcortin, and alpha-fetoprotein. The suppression of such proteins is also used as an indicator of inflammations. The physiological role of suppressed synthesis of such proteins may be protection of amino acids for the production of positive APR, sufficiently. Due to the same underlying cause, productions of HDL and LDL may also be suppressed in the liver. For example, although the similar age, gender distribution, smoking, and BMI in both groups, triglycerides, DM, and CHD were higher whereas LDL were lower in patients with plasma HDL values of lower than 40 mg/dL, significantly (50). So HDL and LDL may actually behave

as some negative APR in the human body. Similarly, although the lower mean age, BMI, FPG, and LDL, the highest CHD of the group with HDL values of lower than 40 mg/dL can also be explained by the same hypothesis (51). Beside that although the mean triglycerides, fibrinogen, CRP, and glucose values were higher in cases with ischemic stroke, the oxidized LDL values did not correlate with the mean age, stroke severity, and outcome in another study (52). Additionally, significant alterations occurred in the lipid metabolism and lipoproteins compositions during infections, and plasma triglycerides increased whereas HDL and LDL decreased in another study (53). Furthermore, a 10 mg/dL increase of plasma LDL values was associated with a 3% lower risk of hemorrhagic stroke in another study (54). Similarly, the highest prevalences of HT and DM parallel to the increased values of LDL and HDL, and the highest prevalences of COPD, CHD, and CRD in contrast to the lowest values of LDL and HDL may show initially positive but eventually negative APR natures of LDL and HDL in the plasma (55). So the most desired values were between 80 and 100 mg/dL for LDL, between 40 and 46 mg/dL for HDL, and lower than 60 mg/dL for triglycerides in the plasma (47, 51).

As a conclusion, IBS may be a low-grade inflammatory process initiated with smoking, infections, inflammations, anxiety, depression, sleep disorders, cancer fear, and death fear-like stresses, and eventually terminates with dysfunctions of gastrointestinal and genitourinary tracts and elevations of some metabolic parameters. There may be some significant relationships between IBS, smoking, female gender, CG, depression, hemorrhoids, urolithiasis, FPG, and plasma triglycerides. In other words, FPG and plasma triglycerides may behave as sensitive APR in IBS.

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Umbilical hernia should alert physicians about terminal endpoints of the metabolic syndrome in adults

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ABSTRACT

Background: There may be some significant associations between the umbilical hernia and terminal endpoints of the metabolic syndrome in adults.

Method: Consecutive patients with an umbilical hernia and/or a surgical repair history of the umbilical hernia were included into the study.

Results: There are 46 patients with the umbilical hernia with a mean age of 62.0 years, and 73.9% of them were female. Body mass index of the hernia group was higher, significantly (33.6 versus 29.1 kg/m2, p= 0.000). Although the prevalence of hypertension (HT) was higher in the hernia group (50.0% versus 27.3%, p<0.01), mean triglycerides and low density lipoproteins were lower in them (p<0.05 for all). Although the prevalence of diabetes mellitus (DM) and coronary heart disease (CHD) were also higher in the hernia patients, the differences were nonsignificant, probably due to the small sample size of the hernia group.

Conclusion: There may be some significant associations between the umbilical hernia and terminal endpoints of the metabolic syndrome, probably on the bases of prolonged inflammatory, atherosclerotic, and pressure effects of excessive fat tissue on abdominal wall muscles. The inverse relationships between obesity and hypertriglyceridemia and hyperbetalipoproteinemia may be explained by the hepatic fat accumulation, inflammation, and fibrosis induced relatively lost hepatic functions in obese individuals. So the umbilical hernia should alert the physicians about terminal endpoints of the metabolic syndrome including obesity, HT, DM, CHD, cirrhosis, peripheric artery disease, chronic obstructive pulmonary disease, chronic renal disease, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, and cancers in adults.

Key words: Umbilical hernia, metabolic syndrome, obesity, atherosclerosis, end-organ insufficiency

Introduction

Chronic endothelial damage may be the major underlying cause of aging and death by causing end-organ insufficiencies in human beings (1, 2). Much higher blood pressure (BP) of the afferent vasculature may be the major underlying cause by inducing recurrent injuries on vascular endothelium. Probably, whole afferent vasculature including capillaries are mainly involved in the process. Therefore the term of venosclerosis is not as famous as atherosclerosis in the literature. Due to the chronic endothelial damage, inflammation, edema, and fibrosis, vascular walls thicken, their lumens narrow, and they lose their elastic natures, those eventually reduce blood supply to the terminal organs, and increase systolic and decrease diastolic BP further. Some of the well-known accelerating factors of the inflammatory process are physical inactivity, sedentary lifestyle, excess weight, animal-rich diet, smoking, alcohol, chronic inflammations, and prolonged infections for the development of terminal consequences including obesity, hypertension (HT), type 2 diabetes mellitus (DM), cirrhosis, peripheric artery disease (PAD), chronic obstructive pulmonary disease (COPD), coronary heart disease (CHD), chronic renal disease (CRD), mesenteric ischemia, osteoporosis, stroke, dementia, end-organ insufficiencies, cancers, early aging, and premature death (3, 4). Although early withdrawal of the accelerating factors can delay terminal consequences, after development of HT, DM, cirrhosis, COPD, CRD, CHD, PAD, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, cancers, and aging, endothelial changes can not be reversed completely due to their fibrotic natures (5, 6). The accelerating factors and terminal endpoints are researched under the titles of metabolic syndrome, aging syndrome, and accelerated endothelial damage syndrome in the literature, extensively (7, 8). On the other hand, there may be some significant associations between the umbilical hernia and terminal endpoints of the metabolic syndrome in adults.

Material and methods

The study was performed in the Medical Faculty of the Mustafa Kemal University between March 2007 and January 2010. Consecutive patients with an umbilical hernia and/or a surgical repair history of the umbilical hernia were collected in the first, and age and sex-matched controls were collected into the second groups. Their medical histories including smoking habit, and already used medications were learnt, and a routine check up procedure including fasting plasma glucose (FPG), triglycerides, low density lipoproteins (LDL), and an electrocardiography was performed. Current daily smokers at least for the last six months and cases with a history of five pack-years were accepted as smokers. Insulin using diabetics and patients with devastating illnesses including malignancies, chronic renal failure, decompensated cirrhosis, uncontrolled hyper- or hypothyroidism, and congestive heart failure were excluded to avoid their possible effects on weight. Body mass index (BMI) of each case was calculated by the measurements of the Same Clinician instead of verbal expressions. Weight in kilograms is divided by height in meters squared (9). Office blood pressure (OBP) was checked after a five-minute of rest in seated position with the mercury sphygmomanometer on three visits, and no smoking was permitted during the previous two-hour. A 10-day twice daily measurement of blood pressure at home (HBP) was obtained in all cases, even in normotensives in the office due to the risk of masked hypertension after a 10-minute education about proper BP measurement techniques (10). A 24-hour ambulatory blood pressure monitoring was not required due to its equal effectiveness with HBP measurements (11). Eventually, HT is defined as a BP of 135/85 mmHg or greater on HBP measurements (10). White coat hypertension (WCH) is defined as an OBP of 140/90 mmHg or greater but mean HBP of lower than 135/85 mmHg, and masked HT as an OBP of lower than 140/90 mmHg but mean HBP of 135/85 mmHg or greater (10). Cases with an overnight FPG level of 126 mg/dL or greater on two occasions or already taking antidiabetic medications were defined as diabetics. An oral glucose tolerance test with 75-gram glucose was performed in cases with a FPG level between 100 and 125 mg/dL, and diagnosis of cases with a two-hour plasma glucose level of 200 mg/dL or higher is DM (9). A stress electrocardiography was performed in suspected cases, and a coronary angiography was obtained only for the stress electrocardiography positive cases. Eventually, mean weight, height, BMI, triglycerides, and LDL values and prevalences of smoking, WCH, HT, DM, and CHD were detected in each group, and results were compared in between. Mann-Whitney U Test, Independent-Samples T Test, and comparison of proportions were used as the methods of statistical analyses.

Results

The study included 46 patients in the umbilical hernia and 84 cases in the control groups. Mean age of the umbilical hernia patients was 62.0 years, and 73.9% of them were female. Prevalence of smoking was lower in the umbilical hernia group, nonsignificantly (13.0% versus 19.0%, $p>0.05$). Although the mean heights of the two groups were similar (157.4 versus 158.7 cm, $p>0.05$), the umbilical hernia patients were heavier than the control cases, significantly (85.1 versus 73.1 kg, $p= 0.001$). As a result, the BMI was also higher in the umbilical hernia patients, significantly (33.6 versus 29.1 kg/m2, $p= 0.000$). Interestingly, although the significantly higher mean weight and BMI of the patients with the umbilical hernia, the mean triglycerides and LDL values and prevalence of WCH were significantly lower in them ($p<0.05$ for all). On the other hand, prevalence of HT was significantly higher in the umbilical hernia group (50.0% versus 27.3%, $p<0.01$). Although the prevalences of DM and CHD were also higher in the umbilical hernia group, the differences were nonsignificant, probably due to the small size of the umbilical hernia group (Table 1).

Table 1: Characteristic features of the study cases

Variables	Cases with umbilical hernia	*p*-value	Control cases
Number	46		84
Female ratio	73.9%	Ns*	73.8%
Mean age (year)	62.0 ± 13.2 (29-82)	Ns	62.2 ± 13.0 (29-83)
Prevalence of smoking	13.0%	Ns	19.0%
Mean weight (kg)	85.1 ± 20.8 (54-172)	0.001	73.1 ± 13.1 (44-104)
Mean height (cm)	157.4 ± 11.2 (134-191)	Ns	158.7 ± 10.0 (138-181)
Mean BMI† (kg/m2)	33.6 ± 5.7 (21.0-47.1)	0.000	29.1 ± 5.4 (17.2-42.9)
Mean triglycerides (mg/dL)	119.6 ± 69.2 (49-361)	0.041	145.9 ± 76.9 (56-394)
Mean LDL‡(mg/dL)	120.2 ± 35.5 (49-193)	0.042	138.0 ± 42.1 (10-239)
Prevalence of WCH§	23.9%	<0.05	41.6%
Prevalence of HT‖	50.0%	<0.01	27.3%
Prevalence of DM¶	30.4%	Ns	28.5%
Prevalence of CHD**	17.3%	Ns	13.0%

*Nonsignificant (p>0.05) †Body mass index ‡Low density lipoproteins §White coat hypertension ‖Hypertension ¶Diabetes mellitus **Coronary heart disease

Discussion

Umbilical hernias are common anomalies of the abdominal wall in both genders. The majority of physicians agree that most of the umbilical hernias in adults have an acquired origin, and only 10% of adults with umbilical hernias have congenital causes (12). The umbilical hernias are more common in females both in children and adults (13, 14). They are more common under the age of four and over the age of 50 years (13). They are particularly common in premature babies (up to 84%), overweight children, and middle-aged multiparous women. According to the literature, their prevalence is around 2% in adults. As also observed in the present study, the umbilical hernias are commonly associated with terminal endpoints of the metabolic syndrome including obesity, HT, DM, cirrhosis, CHD, PAD, COPD, CRD, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, and cancers (15). There are not great differences between the various ethnic groups, supporting the possible acquired etiologies such as the metabolic syndrome in adults (13). Umbilical hernias occur when a part of the intestine protrudes through a weak spot in the abdominal wall muscles at the site of umbilicus. Babies are prone to this malformation due to the process of fetal development during which abdominal organs develop outside the abdominal cavity, and then, they return into the abdominal cavity through an opening which will become the umbilicus. Importantly, the umbilical hernias must be distinguished from paraumbilical hernias, defects in one side of the midline at the umbilical region in adults, and from omphaloceles in newborns. Most umbilical hernias close on their own by the age of one year, although up to 10% may take longer to heal in infants. To prevent complications, the umbilical hernias, those that do not disappear by the age of four years or those that appear during adulthood may need surgical operations for repair. The umbilical hernias may become incarcerated or strangulated, but the risk is low, since the underlying defect of the abdominal wall is larger than found in the inguinal ones. The risk of incarceration is half of the inguinal hernias, but three times higher than the femoral ones in an American series (16). Incarceration is predominantly seen in females, and up to 90% of incarcerated hernias of umbilicus occur in women with a mortality rate up to 25% (16). There is also a greater risk of incarceration in the cirrhotic patients receiving medical treatment for ascites, carrying an implant of a peritoneo-venous shunt, or getting an evacuating paracentesis (17). The higher prevalence of umbilical hernias in patients with cirrhosis may also support the pressure effect of intra-abdominal fluid on abdominal wall muscles (18). Obesity, pregnancy, ascites, and peritoneal dialysis induced abdominal wall distensions may cause pulling of the abdominal wall muscles and deterioration of connective tissue over the umbilicus. The frequent association of the umbilical hernias with other abdominal wall defects may also support the possible etiologic role of the biophysical changes (13). In the previous study of 291 cases with umbilical hernias, 42% of them were associated with another hernia, and 5% of them were associated with more than two hernias (13). Abnormal dispositions of the umbilical fascia may be one of the factors contributing to herniations (19). Tendinous fibers coming from the muscles of both sides of the abdominal wall decussate obliquely at the linea alba, acquiring different levels of complexity (20). Simpler

decussations may be found in cases with umbilical hernias in which the sac protrudes at the midline. Obesity, pregnancy, ascites, and peritoneal dialysis induced excess pressure on abdominal wall muscles may facilitate rupture of the fibers which decussate in a simple fashion at the linea alba on the umbilicus. In contrast, patients with more complex (triple) decussations may present with paraumbilical hernias in the above conditions. On the other hand, recanalized umbilical veins and deterioration of connective tissue secondary to the accelerated atherosclerotic process of the metabolic syndrome may also facilitate the herniations in cirrhosis.

Obesity may be the major endpoint of the metabolic syndrome, since after development of obesity, nonpharmaceutical approaches provide limited benefit either to heal obesity or to prevent its complications. Overweight and obesity probably lead to a chronic and low-grade inflammation on vascular endothelium, and risk of death from all causes including cardiovascular diseases and cancers increases parallel to the range of excess weight in all age groups (21). The low-grade chronic inflammation may also cause genetic changes on the epithelial cells, and the systemic atherosclerotic process may decrease clearance of malignant cells by the immune system, effectively (22). Overweight and obesity are associated with many coagulation and fibrinolytic abnormalities suggesting that they cause a prothrombotic and proinflammatory state (23). The chronic inflammatory process is characterized by lipid-induced injury, invasion of macrophages, proliferation of smooth muscle cells, endothelial dysfunction, and increased atherogenicity (24, 25). For example, elevated C-reactive protein (CRP) levels in serum carry predictive power for the development of major cardiovascular events (26, 27). Overweight and obesity are considered as strong factors for controlling of CRP concentration in serum, since adipose tissue produces biologically active leptin, tumor necrosis factor-alpha, plasminogen activator inhibitor-1, and adiponectin-like cytokines (28, 29). On the other hand, individuals with excess weight will have an increased circulating blood volume as well as an increased cardiac output, thought to be the result of increased oxygen demand of the excessive fat tissue. The prolonged increase in circulating blood volume may lead to myocardial hypertrophy and decreased compliance, in addition to the common comorbidity of atherosclerosis and HT. In addition to systemic atherosclerosis and HT, FPG and serum cholesterol increased and high density lipoproteins decreased with increased BMI (30). Similarly, the prevalences of CHD and stroke, particularly ischemic stroke, increased with elevated BMI values in another study (31). Eventually, the risk of death from all causes including cardiovascular diseases and cancers increased throughout the range of moderate and severe excess weight for both genders in all age groups (21). The female predominance of the umbilical hernias in adults may also be explained by pregnancies and the higher prevalence of obesity in females. But hormonal status of females and some other factors should take additional roles in the process to be able to explain the high prevalence of umbilical hernias even in the period of infancy in females. Similarly, varicous dilatations in the lower extremities are much more common in females, and most of them develop during labour, probably due to vasodilatory effects of estrogen. This vasodilatation may also disturb the abdominal wall muscles in women in the process of umbilical hernias.

There are several consequences of the metabolic syndrome on the liver. Nonalcoholic fatty liver disease (NAFLD) is a term used to define a spectrum of disorders characterized by macrovesicular steatosis which occurs in the absence of consumption of alcohol in amount considered to be harmful to the liver. Since the chance of NAFLD is directly proportional to BMI, and there is a high prevalence of excess weight in society, NAFLD is also becoming an important health problem all over the world. According to the literature, sustained liver injury will lead to progressive fibrosis and cirrhosis in up to 25% of affected patients (32). Excessive fat accumulation in hepatocytes is called as hepatosteatosis. It progresses to NAFLD, steatohepatitis, fibrosis, cirrhosis, hepatocellular carcinoma, and eventually hepatic failure. There are two histologic patterns of NAFLD including fatty liver alone and nonalcoholic steatohepatitis (NASH). NASH represents a shift from simple steatosis to an inflammatory component. Excess weight may be the main factor in exacerbating hepatic inflammation and fibrogenesis in NASH. NAFLD affects up to one third of the world population, and it is the most common cause of chronic liver disease even in children and adolescents at the moment (33, 34). The recent rise in the prevalence of excess weight likely explains the NAFLD epidemic, worldwide (35). NAFLD is combined with a low-grade chronic inflammatory state, which results with hypercoagulability, endothelial dysfunction, and an accelerated atherosclerosis (35). NAFLD shares many features of the metabolic syndrome as a highly atherogenic condition, and it may cause hepatic inflammation and cellular injury, particularly at the endothelial level. Beside terminating with cirrhosis, NAFLD is associated with a significantly greater overall mortality as well as with an increased prevalence of cardiovascular diseases (34). Authors reported independent associations between NAFLD and impaired flow-mediated vasodilation and increased intima-media thickness of the carotid artery as the reliable markers of subclinical atherosclerosis (34), so NAFLD may also be a predictor of cardiovascular disease (36). NAFLD may actually be considered as the hepatic component of metabolic syndrome since hepatic fat accumulation is highly correlated with the components of the metabolic syndrome (37). Similar to the present study, although the prevalence of dyslipidemia was significantly lower in the normal weight than the overweight groups (25.0% versus 45.2%, $p<0.001$), there was a nonsignificant difference between the overweight and obesity groups (45.2% versus 37.5%, $p>0.05$) (38). These findings may be explained by the hepatic fat accumulation, inflammation, and fibrosis induced relatively lost hepatic functions in obese individuals.

WCH may be a progression step between the sustained normotension (NT) and overt HT in the metabolic syndrome. When the authors compared the sustained NT, WCH, and overt HT groups, prevalence of nearly all of the pathologies including obesity, impaired glucose tolerance, DM, and CHD showed significant progressions from the sustained NT towards the WCH and overt HT groups (39). Nearly all of the pathologies were significantly higher in the WCH than the sustained NT groups (39). The similar progressions were observed nearly in all of the pathologic conditions between the WCH and overt HT groups, too, but interestingly the prevalence of dyslipidemia was the highest in the WCH group, and it was 41.6% versus 19.6% of the sustained NT ($p<0.001$) and 35.5% of the overt HT groups

($p<0.05$) (39). Against a previous study indicating serum triglycerides and cholesterol levels did not differ significantly between the NT, WCH, and sustained HT cases in men (40), the similar results indicating higher prevalence of dyslipidemia in the WCH cases were also observed in another study (41). So the higher prevalence of dyslipidemia in the WCH group may explain the adverse effects of WCH on health, since the dyslipidemia comes with obesity, HT, DM, CHD, stroke like problems in the future. Again the lower prevalence of dyslipidemia in the HT group may be explained by the hepatic fat accumulation, inflammation, and fibrosis induced relatively lost hepatic functions in obese individuals, since the prevalence of obesity was significantly higher in the overt HT than the WCH groups ($p<0.01$) (39). So WCH and hyperlipoproteinemias may show accelerating trend of getting weight. By this way, the detected higher prevalences of WCH even in the second (33.3%) and in the third decades (46.6%), despite the lower prevalences of obesity in these age groups, may show the trend of getting weight (11), and the WCH and hyperlipoproteinemias may be the alarming signs of obesity and several consequences of it in the future.

As a conclusion, there may be some significant associations between the umbilical hernia and terminal endpoints of the metabolic syndrome, probably on the bases of prolonged inflammatory, atherosclerotic, and pressure effects of excessive fat tissue on abdominal wall muscles. The inverse relationships between obesity and hypertriglyceridemia and hyperbetalipoproteinemia may be explained by the hepatic fat accumulation, inflammation, and fibrosis induced relatively lost hepatic functions in obese individuals. So the umbilical hernia should alert the physicians about terminal endpoints of the metabolic syndrome including obesity, HT, DM, CHD, cirrhosis, PAD, COPD, CRD, mesenteric ischemia, osteoporosis, stroke, dementia, other end-organ insufficiencies, and cancers in adults.

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The following Abstracts (pages 21- 32)

are from the last two sessions of MEAMA

Seventh Postgraduate Advanced Course in Geriatrics and Gerontology

Index of Titles

Determinants of insulin treatment satisfaction in type 2 diabetic older adults

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F. Zaouali, N. Lassoued1, S. Mhamdi, B. Zantour, W. Alaya, MH. Sfar. Determinants of insulin treatment satisfaction in type 2 diabetic older adults. Middle East Journal of Age and Ageing. 16(1):p21.
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ABSTRACT

Introduction
Glycemic control in elderly diabetics is a challenge. Treatment Satisfaction reflects this control. The aim of our study is to determine the factors associated with insulin treatment satisfaction in type 2 diabetic elderly.

Methods and materials
A cross-sectional study on 86 type 2 diabetic insulin-dependent elderly recruited from the outpatient endocrinology consultation during June and July 2021. We applied the Diabetes Treatment Satisfaction Questionnaire (DTSQ) and geriatric assessment scores.

Results
The median DTSQ score was 28.5 (34-15). Three quarters of the patients were satisfied with the insulin therapy. Satisfied patients had significantly less history of hospitalization and more regular follow-up. Diabetic neuropathy medications were significantly less taken by satisfied patients. The number of daily insulin injections was significantly higher in the unsatisfied patients. Diabetic foot was significantly more frequent in unsatisfied patients. Geriatric assessment showed that satisfied patients were significantly less depressed, more independent in basic activities of daily living as well as instrumental activities, without memory impairment, in better nutritional status and not falling. Using the logistic regression analysis, higher DTSQ scores were associated with regular follow up (V 7.92, 95% CI 1.83 to 34.3). Lower DTSQ scores were associated with the history of hospitalization (VV0.12, 95% CI 0.02 to 0.58), the taking of medications for diabetic neuropathy (β 0.07, 95% CI 0.09 to 0.51), the high number of insulin injections (V 0.43, 95% CI 0.19 to 0.97) and the presence of diabetic foot (β0.17, 95% CI 0.01 to 0.38).

Conclusion
Regular follow up is a positive factor associated with insulin satisfaction, while the history of hospitalization, the taking of medications for diabetic neuropathy, the high number of insulin injections and the presence of diabetic foot are risk factors for patient's insulin dissatisfaction. This needs to be confirmed by multicenter studies on a larger scale.

The contribution of electroconvulsive therapy in the treatment of the sliding syndrome in the elderly : A review of the literature

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Skini Manel, Dhakoueni Senda .The contribution of electroconvulsive therapy in the treatment of the sliding syndrome in the elderly : A review of the literature. Middle East Journal of Age and Ageing. 16(1):p22. DOI: 10.5742/MEJAA.2019.93637

ABSTRACT

Introduction: The sliding syndrome is a specific pathology of the elderly subject. The depressive component is one of the characteristics of this syndrome. Considering the frequency of this disease and its serious evolution, adequate and effective management must be made and among the means which finds their great indication, we mention the ECT.

Materials and methods: This is a review of the literature based on Science Direct and PubMed. The keywords used are: sliding, depression, electric convulsive therapy.

Results: The sliding syndrome is a pathological state that is often seen in people over ninety years of age following a triggering factor and after an interval of a few days. It is manifested by physical but especially psychological disorders such as depression. This depression can be treated by electric convulsive therapy, which is a very effective and well-tolerated treatment in the management of the sliding syndrome. And this, by reducing the cerebral hyperconnectivity in the area of the dorsolateral prefrontal cortex gives a significant reduction of the depressive symptoms. ECT has been shown to be effective in moderate and severe depression in the short term as well as in the long term and is probably more effective than pharmacotherapy in this case. ECT is an interesting alternative not only because of its effectiveness but also because of the few side effects it causes and its rapidity of action.

Conclusion: The treatment of the sliding syndrome in the elderly by electroconvulsive therapy represents currently a challenge especially as we are in front of a category of patients with organic comorbidities and with risk of drug interactions. In this way, several areas of research are necessary to study the effectiveness of ECT in order to generalize this technique.

Abstract
MEAMA - Seventh Postgraduate Advanced Course

Treatment of resistant depression in older adults

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Sinda Dhakouani, Manel Skini.Treatment of resistant depression in older adults. Middle East Journal of Age and Ageing. 16(1):p21. DOI: 10.5742/MEJAA.2019.93638

ABSTRACT

Introduction: Depression in the elderly is a public health issue. Advanced age is considered a factor of resistance in this pathology. The heterogeneity of the etiological mechanisms and the participation of neuroanatomical abnormalities in depression of the elderly explain the high frequency of resistant depression in this population.

Materials and methods: This is a review of the literature based on Pubmed and Science direct data. The key words used are: depression, treatment resistant depression, elderly, therapeutic.

Results : The most common defintion of resistant depression is failure of two antidepressants from different pharmacological classes with adequate dose and duration. The optimal duration is 4-6 weeks when the target dose is achieved.

Three pharmacological therapeutic strategies are possible in resistant depression. Substitution of the initial antidepressant by another antidepressant from different pharmaceutical class. The association of an alpha 2 antagonist (Mitrazapine) with the antidepressant is also possible. Potentiation of the effect of the antidepressant by other molecules was evaluated in several studies: the addition of a neuroleptic such as Aripiprazole or Quetiapine has shown satisfactory responses, also lithium and thyroid hormones are proposed for their potentiating effects.

Other non-pharmacological therapeutics may be advantageous. Electroconvulsive therapy and Repetitive Transcranial Magnetic Stimulation have shown their effectiveness and rapidity in action.

Conclusion : The treatment of resistant depression in the elderly is currently a challenge. The limitation of data specific to the geriatric population requires the need for other research developing clear therapeutic guidelines while taking into account the specificities of this population.

Abstract
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Benefits of insulin therapy in type 2 diabetes of the elderly

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Sawssan Ben Teber et al . Benefits of insulin therapy in type 2 diabetes of the elderly. Middle East Journal of Age and Ageing. 16(1):p24. DOI: 10.5742/MEJAA.2019.93639

ABSTRACT

Introduction: Our aim was to determine the benefits of insulin therapy on the progressive outcome of type 2 diabetes in the elderly.
Methods and materials: a retrospective study carried out at the Internal Medicine department of the Military Hospital of Gabes (Tunisia), collecting type 2 diabetic patients put on insulin after the age of 60, for treatment failure under oral anti-diabetics.

Results: 110 patients including 67 women (61%) with a mean age at 65.5 years. The average age at diagnosis of diabetes was 49 years (31-75) and the average duration of diabetes 9.9 years (3-32). 20% of the patients were smokers and 6.3% alcoholics. The other risk factors, in particular hypertension and dyslipidemia, were noted in 79 and 36% of cases, respectively.

Adherence to therapy before switching to insulin was considered good in 70% of patients. A correct diet and a minimum acceptable physical activity were followed by 51 and 65.5% of patients, respectively.

Insulin analogues were prescribed for the majority of patients (95%) and the basal "bed time" protocol was indicated in 64% of cases. 18% of our patients had in addition to insulin, oral anti-diabetic drugs.

After insulin therapy, we noted a marked improvement in all glycemic targets with a significant "p" at six months, 1 and 2 years of follow-up. This variation was not influenced by association or not with oral anti-diabetics or diet.

Likewise, there was a markedly lower frequency of occurrence of degenerative complications with insulin. Hypoglycemic accidents were not significantly increased.

Conclusion: Insulin therapy represents an indisputable benefit in the management of type 2 diabetes in the elderly. Do not hesitate to use insulin, as soon as possible, in elderly type 2 diabetics in oral treatment failure.

Abstract
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The plight of the relative deprived

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ABSTRACT

In almost every decade, health systems were being tested in terms of capacity, preparedness and resilience by unforeseen challenges(1). The last pandemic reminded us one more time that preventive medicine was such a global issue as neglectof one piece drives the whole into a crisis.

It's beyond debate that health services affect life satisfaction and quality. Yet, this impact is not independent from the social circumstances. Among the social facts, probably the most important one is equality. People who live in developed countries are no longer under threat of famine or lack of sanitary water. But studies in these countries have brought new perspectives on relative deprivation. In US, it has been shown that poverty is not necessary to be in worse health. Instead, there was a health gradient in all sections of the society going up as the social level improves(1). In "Status Syndrome", not poverty, but inequality derives worse health (2). In this sense, an increase in overall income in the same country after the war didn't increase average happiness(3). Also in Europe, large scale studies like SHARE reported that the impact of inequality couldn't be over come by increased income(4). Relative deprivation is especially important taking absolute deprivation into account(5).. Absolute deprivation is about the neccesities of life, and one of it's essential dimensions is health. Absolute, as well as relative deprivation of access to health services were reported to be associated with late life depression(4,6).

Turkey has undergone a radical health reform which allowed almost every citizen to benefit from general health insurance(7). This was followed by generalization of family practice system. These changes changed the health services and ability to access them dramatically. The purpose of this review is to elucidate the effects of health disparities at worldwide and national levels, and to offer solutions.

Abstract
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The impact of Health Coaching approach on Advanced Care Planning for Elderlies in Long Term Care Center

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Ziad El Ibrik. The impact of Health Coaching approach on Advanced Care Planning for Elderlies in Long Term Care Center. Middle East Journal of Age and Ageing. 16(1):p26. DOI: 10.5742/MEJAA.2019.93641

ABSTRACT

Objective: Discussing Advanced care Planning (ACP) of the residents in Long Term Care Center (LTCC) with the residents and surrogates is essential to ensure that their values, needs and will are achieved and one of the tools used to identify the values is the coaching approach. So in this study we will implement the coaching approach by identifying the values during ACP discussion to study their impact on the decision taken about the medical plan of care and code status.

Methodology: An interventional study was conducted in two different LTCC (Ain W Zain & Dar Salam) for a total of 50 residents. In the controlled group ACP discussion was done without implementing coaching approach and in the interventional group ACP discussion was done with implementing coaching approach. The scales used to assess the residents are ADL, IADL, MMSE, MNA & GDS. The demographic data and ACP discussion questionnaire was done via Zoom and whatsApp applications.

Results: The study showed that the medical plan of care and code status decisions taken at the end of ACP discussion for the interventional group tends more for comfort care, palliative care and less invasive procedure (NG, PEG, Dialysis, Intubation, hospitalization, and other futile treatment) and the more we reach the end of life the percentage increases.

Conclusion: Discussing the values of the resident during ACP with residents in LTCC is essential to have a clear vision about the plan of care that suits residents' needs and will.
Implementation: Apply ACP model in all LTCC and coaching approaches as a new model of care as soon as possible after admission resident. Train healthcare professionals about ACP and coaching approach.

Key words: ACP, LTCC, coaching, values.

Abstract
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Associated factors with metabolic syndrome in elderly patients harboring adrenal incidentaloma: A comparative study

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ABSTRACT

Background and Aims: Growing scientific evidence supports the hypothesis of an increased cardiometabolic risk in patients harboring adrenal incidentalomas (AI). Despite the high incidence of both conditions in the elderly, limited data are available about this association. We aim to assess the prevalence of MetS and its associated factors in aged patients harboring AI.

Patients and Method: We conducted a retrospective comparative study including 69 geriatric patients diagnosed with AI in our endocrinology center (2011-2020). MetS was diagnosed based on the National Cholesterol Education Program's Adult Treatment Panel III criteria. We compared two groups :
[MetS+] : elderly subjects with MetS(n=17)
[MetS-] : elderly subjects without MetS(n=52)

Results: There was no significant age diffrence between both groups ([MetS+] :72.1 vs [MetS=] 71.0 years old ; p=0.82). Female gender was significantly associated with MetS ([MetS+] 82.4% vs [MetS-] 39.1% ; p=0.006). Patients bearing bilateral AI were significantly more affected by MetS ([MetS+] 58.8% vs [MetS-] : 4.3% ; p=0.000) compared to those having unilateral AI. Smaller incidentaloma size aggravates substantially the risk of developing MetS ([MetS+] 21.0 vs [MetS-] :26.7 mm ; p=0.009). Higher phosphatemia was statistically linked to the presence of MetS ([MetS+] 1.30 vs [MetS-] : 0.96 mmol/l ; p=0.018). We noted no significant correlation between hormonal hypersecretion and MetS in older adults, since there was a comparable distribution of functioning and nonfunctioning AI in the two groups(p=0.693).

Conclusion: AI is associated with a higher cardiometabolic risk, particularaly in advanced age. Metabolic abnormalities are classically attributed to hormonal hypersecretion. Several studies have proven that insulin resistance and related distrubances also occur in nonfunctioning AI. Our results suggest that bilateral and smaller AI may worsen the risk of metabolic dyregulation in geriatric patients, regardless of their secreting profile. Further research is needed to elucidate this hypothesis.

Elderly insulin-dependent type 2 diabetics: Are they on the way to therapeutic objectives?

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F. Zaouali, N. Lassoued, A. Sondess, W. Alaya, M.H. Sfar. Elderly insulin-dependent type 2 diabetics: Are they on the way to therapeutic objectives? Middle East Journal of Age and Ageing. 16(1):p28. DOI: 10.5742/MEJAA.2019.93643

ABSTRACT

Introduction: Type 2 diabetes is a major public health problem and a veritable epidemic of the 21st century. It is associated with high morbidity and mortality mainly due to complications such as cardiovascular events and renal failure. The Objective of our study is to assess diabetes control among type 2 diabetic insulin-dependent older adults.

Methods and materials: A cross-sectional study on 86 type 2 diabetic insulin dependent elderly recruited from the outpatient endocrinology consultation during June and July 2021.

Results: The mean age of the population was 70.65±6 years with sex ratio of 0.8. The majority were married (69.8%). Almost half were illiterate (47.7%). A low economic level was found in 75.5%. Nearly a quarter of the patients were smokers (24.4%) and 8.1% were alcohol consumers. The median number of chronic pathologies was 5 [3]. Hypertension was the most frequent chronic pathology (73.3%) followed by dyslipidemia (54.7%). The mean duration of diabetes was 15.48±6.6 years. The mean duration of insulin therapy was 7.42±5.8 years. Human insulin was the most used (86.6%). In combination with insulin therapy, fifty-eight patients were on oral antidiabetics (67.4%). The mean level of glycated hemoglobin (HbA1C) was 9.9%±1,79%. Only 10.5% of patients had controlled diabetes. Therapeutic education was absent in 38.2%. Diabetic neuropathy was the most common degenerative complication (68.6%). Only 2 patients followed their diabetes more than twice a year.

Conclusion: The results found among our seniors are worrying, which encourages better studies of the predictive factors of poor glycemic control to reduce patients' morbidity and consequently higher health costs both for the elderly patients and for society.

Malnutrition and dependence among insulin-dependent type 2 diabetic older adults

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ABSTRACT

Introduction: The Middle East and North Africa region has the second highest prevalence of diabetes among the elderly with (24.2%). This prevalence is about 36.9% in Tunisia. The objective of our study is to screen for the risk of malnutrition and dependence among insulin-dependent type 2 diabetic older adults.

Methods and materials: A cross-sectional study on type 2 diabetic insulin dependent elderly recruited from the outpatient endocrinology consultation during June and July 2021. We applied the geriatric assessment scores: the KATZ scale, the Lawton scale and the Mini Nutritional Assessment (MNA).

Results: 86 patients were included whose median age was 69 years with an interquartile range of 7 and extremes ranging from 65 to 96 years (mean age of 70.65 ± 6 years). The most represented age group was that of 65 to 95 years with a number of 72 patients (83.7%). Sex ratio was 0.8. Eighty patients lived with their families (93%) and six patients lived alone (7%). The median number of drugs taken by our patients was 7 with an interquartile range of 2.9. Fifty-nine patients were on human insulin (86.6%). The median of the KATZ scale was 6 with an interquartile range of 0.62. Sixty-four patients were autonomous in basic activities of daily living (74.4%) and twenty-two were probably dependent (25.6%). The median of the Lawton scale was 5 with an interquartile range of 3. Fifty-three patients were autonomous in instrumental activities of daily living (61.6%) and thirty-three were probably dependent (38.4%). The mean MNA was 22.3 ± 4.6. Nutritional status was satisfactory in 50% of our patients (n=43). Thirty had a probable risk of malnutrition (34.9%). Thirteen were probably in poor nutritional status (15.1%).

Conclusion: The management of elderly insulin-requiring type 2 diabetics should be comprehensive and should take into consideration their geriatric particularities and heterogeneity.

Hyperhomocysteinemia and venous thrombosis in the elderly

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N. Adaily et al.. Hyperhomocysteinemia and venous thrombosis in the elderly.
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ABSTRACT

Introduction: Hyperhomocysteinemia (HH) is frequently encountered in the elderly. It favours the development of venous thrombosis (VT) in this population.

The aim of our study is to determine the clinical, therapeutic and evolutionary particularities of VT in the AS associated with HH.

Methods and materials: This is a retrospective descriptive study of 219 cases of patients aged 65 years and over, followed up for venous thrombosis, collected in the Internal Medicine Department of the Sahloul University Hospital of Sousse; among these patients, 50 cases of VT associated with HH were studied.

Results: There were 23 men (46%) and 27 women (54%). The mean age was 75.3 years. The mean homocysteine level was 20.04 µmol/l. Lower limb VT was present in all patients. It was associated with inferior vena cava thrombosis in one case. Oedema was found in 98% of patients. Complications related to VT and/or treatment were frequently: asymptomatic Vitamin K antagonists (VKAs) overdose in 24% of cases, haemorrhage (14%), recurrence (14%) and pulmonary embolism (11%).

Treatment was based mainly on heparin and/or VKA therapy. Folic acid was combined with anticoagulant therapy in all cases.

Conclusion: VT is located in the lower limb in the majority of cases. HH may also explain the occurrence of VT in an unusual location. Untreated HH may be a risk factor for recurrence of VT. HH remains a leading cause of venous thromboembolic disease in the elderly.

Abstract
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Vitamin K antagonists necrosis in the elderly: a case report

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N. Adaily et al. Vitamin K antagonists necrosis in the elderly: a case report. Middle East Journal of Age and Ageing. 16(1):p31. DOI: 10.5742/MEJAA.2019.93646

ABSTRACT

Introduction
Skin necrosis remains a rare but serious effect of Vitamin K antagonists (VKAs) use. Paraesthesia and pain precede the skin signs, followed by the development of a well-demarcated erythematous plaque. There is no associated visceral involvement. We report a case of VKA skin necrosis in an elderly woman.

Observation
This was a 70 year old, obese, diabetic, hypertensive, cholecystectomized patient who had been bedridden for one month and who presented with a thrombosis of the left popliteal vein confirmed by a venous Doppler ultrasound of the lower limbs. The biology showed hyperhomocysteinemia. After one week of treatment with VKAs, the patient presented with an inflammatory, infiltrated placard on the outer surface of the left thigh, surmounted by a necrotic and haemorrhagic lesion. The blood count showed a hyperleukocytosis; the c-reactive protein was 80 mg/l. The course of action was to stop the AVKs and prescribe triple antibiotic therapy based on metronidazole, ofloxacin and cefapirin. Surgical excision was performed. Cautious reintroduction of VKA was recommended. The evolution was marked by the regression of the inflammatory placard and the necrotic lesion. No recurrence was detected. The diagnosis of anti-vitamin K skin necrosis was then retained.

Conclusion
Skin necrosis to VKAs requires discontinuation of anticoagulants. Heparin treatment must then be resumed, sometimes combined with vitamin K supplementation. Prevention of recurrence involves the careful reintroduction of VKAs.

Abstract
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Advanced Care Planning in Long Term Care Facility

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Ziad El Ibrik. Advanced Care Planning in Long Term Care Facility
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ABSTRACT

Introduction: Discussing Advance care Planning (ACP) in Long Term Care Facility (LTCF) with the residents and surrogates is essential to ensure that their values, needs and will are achieved.

The increased number of Older people globally is associated with many challenges (physiological changes, recurrent readmission to hospitals, social & economical demand in addition to increased demand for LTCF); but the communication about Advance Care Planning (ACP) & signing Advance directives (AD) is still low. Nearly 70% of older adult residents in long-term care institutions have not signed any ADs related to different barriers (Dening et al., 2019; Mauleon & Staffileno, 2019).

Methods & Materials: In this study we implemented a new ACP Model that suits the Middle East Population (LTCCME-ACP) by identifying the values during ACP discussion to study its impact on the decision taken about the medical plan of care and code status.

Results: The study showed that the medical plan of care and code status decision taken by the end of ACP discussion tends more for comfort care, palliative care and less invasive procedure (NG, PEG, Dialysis, Intubation, hospitalization, and other futile treatments) and the more we reach end of life the percentage increases.

Conclusion: Discussing the values of the resident during ACP discussion in LTCC is essential to have a clear vision about the plan of care that suits resident's needs and will.

So we recommend to apply ACP model in all LTCF as soon as possible after the resident's admission and to train healthcare professionals about ACP discussion.