Miscellaneous

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Lecture No. 11

Obesity

- **Obesity Epidemic**: Increasing prevalence globally, especially in developed countries, contributes to heightened risks of diseases like **diabetes** and **cardiovascular conditions**.
- **Body Mass Index (BMI)**:
- BMI= weight (kg) / height (m)
- **Overweight** is classified as BMI ≥25, and **obesity** as BMI ≥30.
- **Prevalence and Epidemiology**
- **Statistics**: in 2018, **over 25% of adults** in England were obese. Projections for 2030 estimate **35% obesity** prevalence.

Obesity

- **Aetiology**
- **Primary Cause**: **Energy** imbalance between **intake** and **expenditure**.
- **Additional Factors**:
  - **Cultural, socioeconomic, and demographic factors**: Gender and ethnicity.
  - **Medical conditions**: Hypothyroidism.
  - **Medications**: Corticosteroids, beta-blockers, and anticonvulsants.

Obesity

- **Evidence Base for Over-the-Counter Medication**
- **Orlistat**:
  - **Mechanism**: Inhibits gastric and pancreatic lipase, reducing fat absorption.
  - **Efficacy**: Modest weight loss of **2.34 kg over 12 months**.
  - **Best Results**: Achieved with short-term use (6–12 months) **alongside lifestyle changes**.
  - **Supplementation**: **Fat-soluble vitamins** recommended due to malabsorption.

Obesity

- **Evidence Base for Over-the-Counter Medication**
- **Orlistat**:
- **Practical Prescribing and Product Selection**
- **Indication**: Adults (≥18 years) with BMI ≥28 kg/m².
- **Dosage**: 60 mg capsule three times daily, around meals.
- **Criteria for Discontinuation**: No weight loss after 12 weeks.

Obesity

- **Evidence Base for Over-the-Counter Medication**
- **Orlistat**:
- **Side Effects**:
  - **Common**: GI disturbances (oily stools, faecal urgency).
  - Minimized by limiting fat intake (<20 g/meal).
- **Contraindications**: Pregnancy, breastfeeding, warfarin use, and potential interactions (e.g., ciclosporin).

Obesity

- **Evidence Base for Over-the-Counter Medication**
- **Lifestyle Recommendations**:
  - **Diet**: Mildly hypocaloric, low-fat diet.
  - **Exercise:**
    - Gradual increase in duration and intensity to maintain long-term weight loss.
    - Start with moderate exercise (e.g., brisk walking), progressing to at least 80 minutes/day.
- **Weight Loss Goals**:
- 1–4 kg/month short term,
- 10%–20% of body weight in the medium to long term.

Musculoskeletal Problems

- **Sprains**: Ligament injury due to twisting of joints; often involves swelling and limited motion.
- **Strains**: Muscle injury from overuse; causes swelling and pain.
- **Bruising**: Common after trauma; spontaneous bruising may indicate underlying conditions (e.g., blood disorders).
- **Head Injury**: Always **refer** patients with head trauma, particularly children.

Musculoskeletal Problems

- **Other Conditions**:
    - **Bursitis**: Joint swelling with pain.
    - **Frozen Shoulder**: Painful and stiff shoulder, more common in older adults.
    - **Joint Pain**: Causes include arthritis (OA, RA, gout) and joint infections.
    - **Back Pain**: Ranges from muscular strain to serious conditions like sciatica or kidney-related pain..

Musculoskeletal Problems

- **Patient Assessment**
- **Age**:
  - **Elderly** patients are more prone to **fractures** due to **osteoporosis**.
  - Falls in the **elderly** require **referral** and possibly X-rays.

Musculoskeletal Problems

- **Referral**:

    1. Severe pain
    2. Suspected fractures
    3. Serious conditions like sciatica or arthritis.
    4. Problems with bladder function
    5. Back pain (numbness) radiating to leg
    6. Patients unable to bear weight on an injured ankle/foot

Musculoskeletal Problems

- **Management**
- **RICE Protocol for Sprains and Strains:**
  - **Rest, Ice, Compression, Elevation**.
  - Ice: Apply for 15–20 minutes, 3–4 times a day for (48 hours) .
  - **Excessive icing** can lead to significant **vasoconstriction**, which may hinder the clearance of inflammatory mediators from the damaged area, potentially slowing down recovery.
  - **The application of heat can be effective in reducing pain. However, Avoid heat in the acute phase**; use after 1–2 days for pain relief.

Musculoskeletal Problems

- **Management**
- **Medications**:
  - **Paracetamol**: Preferred for pain relief (safe in pregnancy, less GI irritation).
  - The patient should not take more than 2 tablet at any one time and not take more than 8 in 24 hours (note: each tablet contain 500 mg).
  - At high doses, paracetamol can cause **liver toxicity** and damage may not be apparent until a few days later. All overdoses of paracetamol should be taken seriously and the patient should be referred
  - **Aspirin**: Effective but associated with risks like **GI bleeding** and contraindications in children under 16.
  - **Dosage**: adults and children over 16 years of age, **300–900 mg every 4–6 hours** when required**; maximum daily dose 3600 mg**.

Musculoskeletal Problems

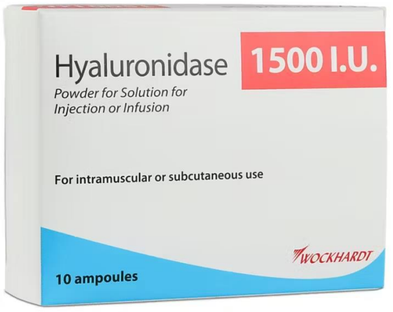
- **Management**
- **Medications**:
  - **NSAIDs** (e.g., Ibuprofen): For pain and inflammation; avoid in patients with ulcers or aspirin sensitivity.
  - **Codeine/Dihydrocodeine**: Narcotic analgesics; risk of drowsiness and constipation.
  - **Caffeine**: Occasionally included in combination products but may disturb sleep.
  - **Topical Analgesics**:
    - Counterirritants (e.g., menthol, methyl salicylate, capsaicin) for localized pain.
    - NSAID creams (e.g., diclofenac) for inflammation.

Musculoskeletal Problems

- **Management**
- **Prevention and Practical Points**:
  - Prevent recurrent back pain with proper posture, weight management, and lifting techniques.

Musculoskeletal Problems

- **Management**
- **Supplements:**
- **Heparinoid and hyaluronidase**
- Heparinoid and hyaluronidase are enzymes that may **help to disperse edematous fluid in swollen areas.**
- A **reduction in swelling and bruising** may therefore be achieved.
- Products containing *heparinoid* or *hyaluronidase* are used in the treatment of **bruises**, **strains** and **sprains**.



Musculoskeletal Problems

- **Management**
- **Supplements:**
- **Glucosamine and chondroitin**
- There is some evidence that glucosamine sulphate (**which stimulates cartilage production**) and chondroitin (which **inhibits cartilage destruction)** improve the symptoms of OA in the knee.

Nicotine Replacement Therapy

- **Background**
- Smoking is a leading cause of preventable illness and death worldwide.
- In the UK (2016), smoking caused:
  - 37% of respiratory disease deaths.
  - 26% of cancer deaths.

Nicotine Replacement Therapy

- **Prevalence and Epidemiology**
- Smoking prevalence in the UK is declining:
  - 1974: 45% smokers.
  - 2017: 15% smokers.
- E-cigarette usage: 5.5% of people, with 53% using them to quit smoking.

Nicotine Replacement Therapy

- **Aetiology**
- Key harmful components of tobacco smoke:
  - **Tar**: Carcinogenic.
  - **Carbon monoxide**: Reduces oxygen transport in blood.
  - **Nicotine**

- Nicotine withdrawal **triggers cravings** when levels drop below a threshold.

Nicotine Replacement Therapy

- **Effectiveness of NRT**
- Proven to increase quitting rates by 50–60% .
- All forms of NRT (e.g., gum, patches, lozenges) are equally effective.

Nicotine Replacement Therapy

- **General Guidelines**
- **Motivation**: Essential for success.
- **Product Options**: Include gum, lozenges, patches, nasal spray, inhalators, and mouth spray.
- **Combination Therapy**: Combining NRT forms (e.g., gum and patches) improves outcomes for highly dependent smokers.

Nicotine Replacement Therapy

- **Age Considerations**
- Most products can be used from 12 years onward.
- Adolescents require adult dosages but should be referred for structured programs after 12 weeks.
- **Side Effects**
- Rare and include:
  - GI disturbances (e.g., nausea, indigestion with gum).
  - Local skin irritation or vivid dreams (patches).
  - Headache and diarrhea.

Nicotine Replacement Therapy

- **Specific Products**
- **Nicorette**
- **Forms**: Gum (2 & 4 mg), patches (10, 15 & 25 mg), inhalator, nasal spray, lozenges, and mouth spray.
- **Dosage**:
  - Gum: 2 mg for <20 cigarettes/day, 4 mg for >20. Max 15 pieces/day.
  - Inhalator: Up to 6 cartridges/day.
  - Nasal Spray: 1 spray/nostril twice/hour, max 64 sprays/day.

Nicotine Replacement Therapy

- **Specific Products**
- **Nicotinell**
- **Forms**: Gum, patches (7, 14 & 21 mg), and lozenges.
- **Unique Features**:
  - Continuous **24-hour patches** for smokers who **crave cigarettes upon waking**.
- **NiQuitin**
- **Forms**: Gum, patches, lozenges (standard and Minis).
- **Dosing**:
  - **Lozenges**: Low strength (2 mg) for smoking >30 min after waking; high strength (4 mg) for within 30 min.
  - **Steps for patches and lozenges**: Gradual reduction over 6–12 weeks.

Nicotine Replacement Therapy

- **Patches**:
  - Apply to non-hairy skin on hip, chest, or upper arm.
  - Alternate sites to avoid irritation.
  - 16-hour patches suit most; use 24-hour patches for morning cravings but remove if sleep disturbances occur.
- **Gum Use**:
  - Employ "chew and rest" technique.
  - Chew until the taste becomes strong, then rest between cheek and gum.
- **Diabetics**:
  - **Monitor blood sugar** levels as NRT may affect carbohydrate metabolism.

Nicotine Replacement Therapy

- **When to Refer**

1. Repeated failed attempts to quit.
2. Severe withdrawal symptoms.
3. Patients requesting intensive support.
4. Pregnant smokers needing tailored interventions.

Medication Adherence and Errors

- Medication adherence refers to how well a patient follows their prescribed medication regimen, including timing, dosage, and frequency.
- **Types of Adherence**

1. **Primary Non-Adherence**:
   - The patient does not fill or pick up the prescribed medication.
2. **Secondary Non-Adherence**:
   - The patient obtains the medication but does not take it as prescribed.
3. **Persistence**:
   - Continuing the prescribed therapy over the recommended duration.

Medication Adherence and Errors

- **Factors Influencing Adherence**

1. **Patient-Related Factors**:
   - Forgetfulness.
   - Lack of understanding about the medication or condition.
   - Concerns about side effects or dependency.
2. **Medication-Related Factors**:
   - Complex regimens.
   - High cost of medications.
   - Unpleasant side effects.
3. **Healthcare System Factors**:
   - Poor communication between patient and provider.
   - Limited access to pharmacies or healthcare facilities.

Medication Adherence and Errors

- **Consequences of Non-Adherence**

1. Worsened disease outcomes.
2. Increased hospitalizations and healthcare costs.
3. Development of resistance (e.g., antibiotic non-adherence).

Medication Adherence and Errors

- **Improving Medication Adherence**
- **Patient Education**:
  - Explain the purpose, benefits, and potential side effects of the medication.
- **Simplify Regimens**:
  - Use combination therapies or once-daily dosing where possible.
- **Support Tools**:
  - Medication reminders (e.g., pill organizers, mobile apps).
  - Regular follow-ups and check-ins.
- **Address Barriers**:
  - Provide financial assistance or alternative treatments for costly medications.
- **Involve the Patient**:
  - Shared decision-making to ensure the patient agrees and is committed to the regimen.

Medication Adherence and Errors

- **Medication Errors**

- Medication errors are preventable events that may lead to inappropriate medication use or patient harm while the medication is in the control of healthcare professionals or the patient.

Medication Adherence and Errors

- **Types of Medication Errors**

1. **Prescribing Errors**:
   - Incorrect drug, dose, route, or duration.
   - Failure to account for patient-specific factors (e.g., allergies, renal function).
2. **Dispensing Errors**:
   - Providing the wrong medication or incorrect labeling.
   - Errors in compounding or preparation.
3. **Administration Errors**:
   - Incorrect timing, dose, or route of administration.
   - Using expired or contaminated medications.
4. **Monitoring Errors**:
   - Failure to observe side effects, drug interactions, or therapeutic efficacy.

Medication Adherence and

- **Common Causes of Errors**

1. **Human Factors**: Fatigue, distraction, lack of knowledge.
2. **Systemic Issues**: Poor workflow, lack of standardization, inadequate communication.
3. **Technological Issues**: Errors in electronic prescribing systems.

Medication Adherence and

- **Preventing Medication Errors**

1. **Education and Training**:
   - Regular training for healthcare professionals on safe medication practices.
2. **Technology Use**:
   - Implement electronic prescribing and barcoding systems.
3. **Standardization**:
   - Use standardized protocols and checklists.
4. **Double-Checking Systems**:
   - Employ independent double checks for high-risk medications.
5. **Clear Communication**:
   - Ensure clear instructions and labeling.
   - Use teach-back methods with patients to confirm understanding.
6. **Reporting and Learning**:
   - Encourage reporting of errors without fear of punishment to facilitate systemic improvements.

Medication Adherence and

- **The Role of Pharmacists**
- Pharmacists play a vital role in improving medication adherence and preventing errors by:

1. **Patient Counseling**:
   - Educating patients on their medications and answering questions.
2. **Medication Review**:
   - Identifying potential drug interactions or duplications.
3. **Monitoring Therapy**:
   - Following up on adherence and therapeutic outcomes.
4. **Collaborative Care**:
   - Working with healthcare providers to optimize medication regimens.