A novel coronavirus has been identified as the culprit in a new outbreak of severe acute respiratory syndrome (SARS) in humans.\(^1,3\) There were 81 laboratory-confirmed cases and 45 deaths as of July 11, 2013.\(^1,2\) The first cases started to appear in September 2012, and only 22 cases were laboratory-confirmed by May 2013.\(^2\) This outbreak has quadrupled in number of confirmed cases and deaths in only 2 months. More than half of the people infected by the virus have died.\(^1\) However, most cases did not seem to result from human-to-human transmission.\(^2,3\)

The virus seems to be originating from the Gulf Region of the Middle East, with cases being reported from only Saudi Arabia, Qatar, United Arab Emirates, and Jordan.\(^1,3\) Cases reported from the United Kingdom, Germany, France, and Tunisia all have a history of recent travel to one of the involved Middle East countries.\(^2,3\)

Coronavirus is a family of viruses that can infect humans or animals separately with a spectrum of diseases like the common cold or SARS.\(^1,3\) Animal variants of coronavirus do not usually infect humans, but the current MERS-CoV is genetically closely related to a virus from European and African insectivorous bats.\(^3\) The virus seems to be mostly zoonotic in nature, and only a few cases can be attributed to possible human-to-human transfer as the virus does not seem to have adapted to efficient and sustained human-to-human transmission yet.\(^3\)

The World Health Organization (WHO) recommends that travelers returning from the Middle East who present with severe acute respiratory infection like pneumonia with fever, cough, and breathing difficulties should be tested for MERS-CoV.\(^2\) Immunocompromised patients who return from the Middle East should also be screened for MERS-CoV even if they present with atypical signs and symptoms like diarrhea.\(^2\)

Due to the small number of cases, the WHO has not recommended any travel restrictions.\(^2\) However, travelers should follow general health precautions while traveling to the Middle East by avoiding people with respiratory infections, washing hands frequently, avoiding undercooked meats, peeling raw fruits and vegetables, avoiding unsafe water, and avoiding contact with live farm or wild animals.\(^2\)

The annual Hajj pilgrimage to Mecca is a mass gathering of about 3 million Muslims each year.\(^1\) Due to the crowded nature of this gathering, unique risk factors are associated with it.\(^1\) This year the pilgrimage will take place in mid-October.\(^1\) Saudi Arabia has recommended that the elderly, the terminally ill, pregnant women, and children postpone their pilgrimage this year.\(^1\) The WHO is preparing a detailed document on the special precautions to be followed during this pilgrimage season.\(^2\)

**By Ali Alharbi, PharmD Candidate**

**REFERENCES:**
2012 CHEST Guidelines Updates

The latest edition of the American College of Chest Physicians’ (ACCP) CHEST guidelines on antithrombotic therapy and prevention of thrombosis, published February 2012, contains several new recommendations regarding the prevention and management of thrombosis. These guidelines also contain significantly fewer strong recommendations because of new criteria for stronger 1A recommendations. The new criteria emphasize patient-important outcomes (e.g., symptomatic vs. asymptomatic DVT) and give more serious consideration to the biases associated with studies and subject experts.

Primary Prophylaxis
Low-dose aspirin is now recommended for all persons aged ≥50 years regardless of cardiovascular risk factors (2B recommendation). A large meta-analysis suggested that long-term aspirin use in lower-risk patients was associated with 6 fewer MIs and 4 more major bleeding events per 1000 patients. The guidelines note that the benefit to risk ratio is fairly balanced; however, in the same meta-analysis, aspirin use was associated with 6 fewer deaths per 1000 patients, which resulted in the recommendation of aspirin use.

Atrial Fibrillation
Previous guidelines recommended thrombosis prophylaxis for all patients, regardless of their stroke risk. Prophylaxis is no longer recommended for low-risk patients (CHADS2=0), because of their relatively low risk of stroke (0.8% yearly) and increased risk of bleeding with long-term aspirin use. Dabigatran is now preferred over warfarin for intermediate and high-risk patients (CHADS2≥1; 2B). This change was based on the results of the Randomized Evaluation of Long-Term Anticoagulation Therapy (RE-LY) trial. In this study, dabigatran was associated with a 33% reduction in nonfatal stroke, an 11% reduction in all-cause mortality, and no increase in risk of nonfatal major bleeding when compared with warfarin. However, patient renal function must be considered since dabigatran, unlike warfarin, is cleared primarily through the kidneys.

Warfarin Management
Outpatients initiated on warfarin should receive a loading dose of 10 mg for two days rather than initially receiving the estimated maintenance dose (2C). Recommendations for the administration of vitamin K for elevated INRs have become more conservative. Previously, patients with an INR between 5 and 9 were monitored closely and either given vitamin K or had warfarin doses held. Because no benefit with vitamin K administration was seen in clinical trials, routine use of vitamin K in these patients is now discouraged (2B). The frequency of INR measurement for patients with consistently stable INRs has decreased from every 4 weeks to every 12 weeks. In one study, patients who did not need a warfarin dose adjustment for 6 months spent similar times in therapeutic range and had no increase in the rate of clinical events when monitored every 12 weeks.

VTE Prophylaxis in Surgical Patients
Low molecular weight heparins are still preferred for thromboprophylaxis in orthopedic surgery patients, but the number of available agents has increased. For patients desiring to avoid daily injections, the new oral agents (apixaban, dabigatran, and rivaroxaban) as well as aspirin (1B) and intermittent pneumatic compression devices (IPCD) are now possible choices. These alternative agents may increase the risk of bleeding (fondaparinux) or have decreased efficacy (heparin, warfarin, aspirin, IPCD) compared to low molecular weight heparins.

VTE Prophylaxis in Medical Patients
For acutely ill hospitalized patients at low risk for thrombosis, the new guidelines recommend against the use of thromboembolic prophylaxis (1B). This recommendation follows the observation that the risk for venous thromboembolism is only 0.3% in low-risk patients without prophylaxis.

Secondary Prophylaxis
Ticagrelor is now preferred over clopidogrel for patients after an acute coronary syndrome (ACS) event regardless of percutaneous coronary intervention (PCI). The results of the Platelet Inhibition and Patient Outcomes (PLATO) trial suggest that the use of ticagrelor in combination with aspirin following an ACS event is associated with lower rates of mortality when compared to clopidogrel plus aspirin (4.5% vs 5.9%).

The latest CHEST guidelines introduced more stringent and patient-centered criteria for assessing evidence and grading recommendations. This resulted in fewer recommendations for antithrombotic therapy. The 2012 edition also contains a number of new recommendations which may change day-to-day practice significantly.

By Chris Gilstrap, PharmD Candidate

REFERENCES:
Below you will find tips on using insect repellents, information about the conventional and plant-based repellent products. Only insect repellents registered by the EPA have been approved for effectiveness and safety. The 2 most effective repellents are DEET and picaridin.

Using insect repellent safely
- Follow the label directions to ensure proper use.
- Repellents should be applied only to exposed skin or clothing. Do not use under clothing.
- Do not apply near eyes and mouth, and apply sparingly around ears.
- Never use repellents on cuts, wounds, or irritated skin.
- Do not spray directly into face; spray on hands first and then apply to face.
- Do not allow children to handle repellents. Apply to your hands, and then rub it on the child.
- Do not spray in enclosed areas. Avoid breathing repellents, and do not use them near food.
- After returning indoors, wash treated skin and clothes with soap and water.
- Do not use any product on pets or other animals unless the label states it is for animals.
- Store safely out of the reach of children.

Conventional repellents: DEET
- DEET concentration varies between products. Higher concentrations do not work better, they just last longer.
- DEET 30% lasts about 6 hours. DEET 10% lasts 2-3 hours.
- Products with more than 50% DEET do not offer increased protection time against mosquitoes.
- Some products do not say DEET on the label. Look at the ingredient list for the chemical names N,N-diethyl-m-toluamide or N,N-diethyl-3-methylbenzamide.
- Products with up to 30% DEET are safe for adults and children 2 months and older.
- Some products containing DEET include Off®, Cutter®, Sawyer,® and Ultrace®.

Picaridin
- Products with higher concentrations of picaridin do not work better, they last longer.
- Picaridin 20% repels mosquitoes for 8-10 hours.
- Choose a product with up to 20% picaridin for adults and children 2 months and older.
- Picaridin is less irritating than DEET, so it might be better for sensitive skin.
- Some products containing picaridin include Cutter Advanced® and Skin So Soft Bug Guard Plus®.

Plant-based repellents:
Oil of Lemon Eucalyptus
- Oil of lemon eucalyptus can last up to 6 hours.
- Choose products with the active ingredient p-menthane-3,8-diol. "Pure" oil of lemon eucalyptus (essential oil) is not the same product and has not been registered with the EPA as an insect repellent.
- Oil of lemon eucalyptus is as effective as products with low concentrations of DEET.
- Use only in adults and children 3 years and older.
- Products include Citrepel® and Cutter Lemon Eucalyptus®.

Citronella Oil
- Citronella-based repellents only protect from mosquitoes for about 2 hours.
- Products include Natrapel Sun® and Off Citronella Scented Oil Sets®.

Permethrin
- Only for use on clothes and gear, DO NOT spray on skin.
- Allow clothes to dry before use.
- Can be used with other repellents for added protection.
- Products include Repel Permanone® and Sawyers Clothing Repellent®.

Other insect repellent products
- Products that contain both sunscreen and insect repellent are not recommended because sunscreen should be applied more often and more liberally than repellents. Use both separately by first applying sunscreen then insect repellent.
- There is no proof that clip-on devices or special bracelets work so an alternative repellent should be available for use.

By Marcus Shaw, PharmD Candidate

REFERENCES:
PATIENT INFORMATION:
Natural Products for Treating Depression

Antidepressant drugs are very effective, but not all people can tolerate them. However, there are some natural alternatives to using antidepressant drugs. These natural products can be used in people who cannot tolerate antidepressant medications or people who are not depressed enough to require strong medication. Although these products are natural, they may still be harmful if used incorrectly. Here are a few things to be aware of before starting these products.

**St. John’s wort** is a commonly used herbal product that is good for treating depression.
- Do not take this product if you are pregnant or breastfeeding.
- This product can interact with many medications including “blood thinners” like warfarin, antidepressants like paroxetine, and heart medications like digoxin.
- Take 300 mg of St John’s wort extract three times daily.
- Do not take this product for more than 8 weeks.

**SAMe** resembles a natural compound found in our bodies. It is also good for depression.
- If you have Parkinson’s disease, bipolar disease, or you are undergoing elective surgery, avoid taking SAMe.
- Ask your doctor before taking SAMe if you are pregnant or breastfeeding.
- Take 400 mg of SAMe twice daily.

**DHEA** is made from soy and wild yams. It is used for depression as well.
- Do not take this product if you are pregnant or breastfeeding.
- Take 50 mg of DHEA every day.
- Do not take DHEA for more than 6 months.

**Saffron** spice is from saffron flowers and can be used to treat depression.
- Saffron can be used as a spice in your normal food.
- Saffron can be prepared as a tea.
- Large amounts of saffron can be dangerous for pregnant women.
- Take 30 mg of saffron extract every day for depression.

Be sure to ask your doctor or pharmacist before taking natural products if you are taking any medication or if you have any medical condition. Always buy natural products from reputable dealers and avoid buying online from unknown manufacturers.

By Ali Alharbi, PharmD Candidate

REFERENCES:

References (cont. from pg. 2)
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