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The management of breast infection was recently reviewed (*BMJ* 2011;342:d396). Breast infections occur in the parenchyma or the skin overlying the breast; parenchymal breast infections may occur in lactating and non-lactating breasts. The most common organism responsible for lactation-associated breast infections is *Staphylococcus aureus* (*S aureus*) while the organisms responsible for non-lactating breast infections include bacteria commonly associated with skin infections but also enterococci and anaerobic bacteria.

Breast infection in lactating women is commonly seen within the first 6 weeks of breast-feeding and initially arises in a localised breast segment but can affect the whole breast if untreated. Mastitis which occurs in up to 10% of breast-feeding women is associated with breast-feeding difficulty, engorgement, poor milk drainage or excoriated nipple. **Treatment requires the appropriate antibiotic (flucloxacillin, co-amoxiclav or a macrolide such as erythromycin or clarithromycin in patients allergic to penicillin, for 10 days)** and the encouragement of milk flow from the engorged segment (by continued breast-feeding or a breast pump). [For information on use of individual antibiotics in lactation, the specific Summary of Product Characteristics should be consulted on www.imb.ie or www.medicines.ie] Even though antifungals are commonly prescribed, there is a lack of good quality evidence to support their use. **The prescription of anti-inflammatory drugs and the use of cold compresses, ice packs or cabbage leaves may help alleviate pain.** Patients in whom the mastitis does not settle after one course of appropriate antibiotics should be referred to hospital for an ultrasound to investigate a suspected breast abscess. Up to 10% of women with mastitis develop a breast abscess; risk factors include maternal age >30 years and gestational age >41 weeks. Abscesses with normal overlying skin can generally be aspirated under ultrasound guidance; however those with overlying thin or necrotic skin require mini-incision and drainage (I&D). Infections which fail to respond to appropriate management require further imaging with needle biopsy to exclude inflammatory cancer. Women should continue breast-feeding although this may be difficult from the affected side; the use of breast pumps may help. Most women continue breast-feeding however in those who are unable, lactation may be suppressed using cabergoline.

Breast infection in non-lactating women is at highest risk of occurring in those who smoke and those with diabetes. Infections may be central, peripheral or occur on the skin of the breast. **Central or subareolar infection** is usually secondary to periductal mastitis (where there is damage to the subareolar ducts which become infected). Patients may present with subareolar inflammation or with an established abscess; associated features include nipple discharge and retraction. It predominantly affects younger women, however it also occurs in men and smoking is a major causative factor; smokers with pierced nipples can develop persistent and troublesome infection. **Peripheral infection** is less common than central infection and is associated with conditions including diabetes, rheumatoid arthritis, trauma and granulomatous lobular mastitis. Patients >35 years with peripheral infection and no obvious cause, should have bilateral mammography on resolution of the infection, as occasionally ductal carcinoma in situ can become infected and present with inflammation or an abscess. **Skin associated infection** occurs when sebaceous cysts on the breast become infected and cellulitis occurs in patients who are overweight, have large breasts, who have had breast surgery or radiotherapy. Cellulitis occurs in the lower half of the breast and under the breast where intertrigo develops. *S aureus* is the usual causative organism and while there is no evidence that fungi play an aetiological role, antifungal creams are commonly prescribed. Hidradenitis suppurativa (HS) which commonly affects the axilla and groin, also affects the skin of the lower half of the breast, resulting in recurrent episodes of infection and abscess formation. **Management of non-lactating and skin associated infections are treated with co-amoxiclav or a combination of erythromycin and metronidazole in patients allergic to penicillin.** Non-lactating abscesses are treated in a similar way to lactating abscesses. Recurrence of central abscesses resulting in a mammary duct fistula is common as the underlying pathology persists and patients may require subsequent definitive surgery. Abscesses related to sebaceous cysts usually respond to incision however those related to HS require I&D with appropriate antibiotics and may require surgical excision with skin grafting in severe cases. The primary management of recurrent infections and intertrigo affecting the lower half of the breast aims to keep the area as clean and dry as possible; patients should wash twice daily and avoid all creams (including antifungals) and talcum powder. Cotton bras or a cotton T shirt worn inside the bra may help keep the area clean and dry.

[Editor's note: this paper serves to remind us that breast infection is common. Most cases resolve with antibiotics but patients should be referred if infections don't resolve after one course of appropriate antibiotics to minimise the associated morbidity.]



Improve risk factor control and prolong life! Atherothrombosis is a leading cause of morbidity and mortality. The benefits of risk-reduction using lifestyle and drug interventions to prevent recurrent cardiovascular (CV) events in patients with established disease are well known. Two studies recently reviewed this topic. **REACH (REduction of Atherothrombosis for Continued Health)** is an observational registry providing up to 48 months' clinical follow-up of >68,000 patients with established CV disease from 44 countries. The first

study used the REACH registry to prospectively evaluate the effects of adherence to guidelines for control of major CV risk factors on patient outcomes in >20,000 patients (mean age 67 years, 70% male) from 18 European countries (*Heart online first doi: 10.1136/hrt.2010.2013710*). Patients had either coronary heart disease (CHD), cerebrovascular disease, peripheral artery disease (PAD) or polyvascular disease (≥ 2 of previous conditions). The following 5 risk factors were assessed over 3 years: systolic and diastolic blood pressure, fasting blood glucose, cholesterol and smoking history. Good risk factor control was ≥ 3 risk factors at target control (BP <140/90mmHg; blood sugar <6.1mmol/L; total cholesterol <5.2 mmol/L; non-smoking). Data were available at 1, 2 and 3 years. **Results showed that 60% of patients had poor control at each timepoint.** Levels of morbidity and mortality gradually increased during the period of follow-up; however, **mortality rates were significantly higher in those with poor risk factor control by year 3 (10.6 vs. 9.7%).** Those with poor control showed higher rates of all non-fatal major events including stroke, MI, and worsening of claudication compared with those with good control; significantly higher rates of hospitalisation were also recorded at all time points. Patients showed higher rates of good control when they were followed by GPs or cardiologists. **Additional independent predictors of good control** included older age, residence in Western Europe, a high level of formal education and treatment with antithrombotic/ lipid-lowering agents. The authors noted that although PAD was associated with a risk of future CV events similar to that reported with CHD, these patients were less likely to be treated with therapies such as statins or antithrombotic agents. The authors conclude that these **results reinforce the importance of tight control of risk factors for all patients with atherothrombotic disease.**

The second study looked at the **effect of body mass index (BMI) on fatal and non-fatal CHD risk.** It reported on a 15-year follow-up of 6,000 moderately hypercholesterolaemic men with no history of myocardial infarction, according to their BMI at baseline (*Heart 2011; 97: 564-8*). Findings were adjusted for the classical CV risk factors including smoking, hypertension, cholesterol levels, history of angina, CV drug therapy, and social deprivation scores. **Results showed that a baseline BMI of $\geq 30\text{kg/m}^2$ was associated with an increased risk of fatal (but not non-fatal) CHD events compared with a BMI of 24-28.** The authors note that an increasing BMI is known as a CV risk factor but that this is thought to be due to its association with CV risk factors such as hypertension, hypercholesterolaemia and diabetes. These findings suggest that **obesity is associated with an increased risk of fatal CHD events even after adjustment for known CV risk factors** and highlights the importance of weight loss interventions in the management of CV risk reduction.



HPSC launches new look website The Health Protection Surveillance Centre (HPSC) works with health service providers to protect and improve the health of the Irish population. Its role includes provision of timely information and independent advice, disease surveillance, epidemiological investigation and related research and training. The HPSC has recently launched a new look website at www.hpsc.ie. The layout includes a new navigation bar which has been created to enable readers to find the information they are looking for quickly

and easily. Readers are recommended to visit the site and check out the extent of useful information available in the **Topics A-Z** (from factsheets on **AIDS** to information on the various **Zoonotic** diseases, with a helpful range of factsheets on various diseases in optional "Other Languages" in between!)