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Pregnant patients, acute health conditions and the family medicine doctor

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الملخص

من خلال فهم الظروف الصحية الحادة التي يمكن أن تتعرض لها المريضة الحامل ، يكون طبيب الرعاية الأولية أكثر قدرة على التمييز بين تلك الحالات التي يمكن إدارتها بأمان داخل بيئة المجتمع ، وتلك التي تتطلب مشورة من زملائها المتخصصين أو تتطلب تقييمًا عاجلاً في نفس اليوم.

الكلمات المفتاحية: صحة الأم ، ألم الصدر ، ضيق التنفس ، صداع ، ألم بطني ، غثيان وقيء ، التهابات المسالك البولية.

Abstract

With an understanding of what acute health conditions a pregnant patient can present with, the primary care physician is better able differentiate those conditions that can be managed safely within the community setting, those that require advice from specialist colleagues or require urgent, same day assessment.

Keywords: Maternal heath, chest pain, palpitations, headache, abdominal pain, nausea and vomiting, urinary tract infections**.**

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
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Introduction:

Primary care physicians need to be familiar with the obstetric related and non-obstetric health conditions that can present during pregnancy (Gregory & Tuladhar,2018). This will allow the patient to receive safe and effective treatment within the primary care setting and referral to an obstetrician or another specialist when hospital-based management is required.

Non obstetric conditions need to be managed appropriately during pregnancy especially as the consequences of poor control will have significant consequences both for the patient and fetus. Pre-existing conditions, like asthma, have been shown to be poorly controlled leading to exacerbations and increased health care utilization (Ibrahim et al, 2018). Other illnesses, like type 2 diabetes, can be newly discovered during pregnancy and require appropriate management involving the primary care team (Bashir et al. 2018).

The influence of pregnancy on primary care-based tests:

In the evaluation of a pregnant patient presenting to a primary care physician, physiological changes in pregnancy can lead to different findings when her vital signs are taken. This is important to understand so that what

is considered as “abnormal” in the non-pregnant state is not automatically assumed to be the case during pregnancy.

A three-center, prospective, longitudinal cohort study of singleton pregnancies with no significant co-morbidities was undertaken to determine gestation specific reference ranges (Green et al, 2020). It demonstrated that:

a. Systolic blood pressure decreased from 12 weeks of gestation from a median of 114 (3rd–97th centile of 95-138) mm Hg to 113 (95-136) mm Hg at 18.6 weeks, then rose progressively from 19 weeks of gestation to a maximum median of 121 (102-144) mm Hg at 40 weeks.

b. Diastolic blood pressure decreased from 12 weeks of gestation from a median of 70 (56-87) mm Hg to its lowest of 69 (55-86) mm Hg at 19.2 weeks, then increased to a maximum median of 78 (62-95) mm Hg at 40 weeks.

c. The median heart rate was lowest at 12 weeks of gestation reading 82 (63-105) beats per minute, rising progressively until 34.1 weeks of gestation to a maximum of 91 (68-115) bpm. Heart rate then decreased slightly to a median of 89 (65-114) bpm at 40 weeks.

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
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www.mecsj.com/

d. SpO2 decreased from 12 weeks of gestation with a median of 98% (94-99%) to reach a minimum of 97% (93-99%) at 40 weeks.

e. There was no significant change in respiratory rate with 15 (9-22) breaths per minute at 12 weeks gestation and 15 (9-23) breaths per minutes at 40 weeks.

f. Temperature decreased from its maximum at 12 weeks of gestation from a median of 36.7°C to a minimum of 36.5°C at 33.4 weeks. Temperature subsequently plateaued until 40 weeks of gestation with a median of 36.6 °C at 40 weeks

Furthermore, clinical investigations, if ordered by a primary care physician, can show pregnancy related features (Acute care toolkit, RCP 2019):

1. Hemoglobin can range between 105-140g/L
2. White blood cells can range between 6-16 x 109/L
3. Renal function:
    a. Creatinine falls during the first and second trimesters
    b. Normal urea is < 77umol/l
    c. Glomerular filtration rate is increased

4. Liver function tests can show a three to four-fold increase in alkaline phosphatase in comparison to pre pregnancy levels

5. ECG can show:

   a. Sinus tachycardia.

   b. T wave inversion in lead 111 and inferior leads.

   c. ST depression in lead 111.

   d. Small 1 wave in lead 111.

   e. Supraventricular and ventricular ectopics

6. Peak expiratory flow rate is unchanged in pregnancy

7. Chest x-ray can show prominent vascular markings and a raised diaphragm due to a gravid uterus and a flattened left hemidiaphragm.

Acute health conditions:

The following examples of symptoms that a primary care physician may encounter when a pregnant patient arrives for a consultation. They are by no means exhaustive and follow on from literature already published to help clinicians working in family medicine or general practice (Gregory & Tuladhar,2018; Acute care toolkit, RCP 2019; Bhatia et al, 2020; Narayan &

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
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www.mecsj.com/

Nelson-Piercy, 2017).

Chest pain

Any cause of chest pain can occur during pregnancy (Acute care toolkit, RCP 2019). The etiologies include:

- Gastrointestinal source:
  - Gastro-esophageal reflux and biliary disease can present throughout pregnancy.
  - Acute fatty liver of pregnancy should be considered if chest pain occurs win the third trimester and is accompanied by abdominal pain
- Respiratory source:
  - Pulmonary embolism: Typically has a pleuritic type pain, and the incidence is 0.1 – 0.67 per 1000 pregnancies (Acute care toolkit, RCP 2019), with 85% of deep vein thrombosis occurring in the left leg due and 70% ilio-femoral (Narayan & Nelson-Piercy, 2017).
  - Infections: typically, there is a productive cough and fever.

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
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- Pneumo-mediastum can occur if there is protracted vomiting and in the second stage of labor (Acute care toolkit, RCP 2019).

- Cardiovascular source:
  - There is a three to four-fold increased risk of myocardial infarction. The pain is typically central or left sided and can be accompanied by nausea and sweating (Acute care toolkit, RCP 2019).
  - Pericarditis can present with typically sharp and pleuritic, improved by sitting up and leaning forward (Imazio, 2020).
  - Aortic dissection is more common in the third trimester and needs to be considered if there is sudden onset of severe chest or back pain and has a tearing nature (Narayan & Nelson-Piercy,2017).

The red flag features for chest pain include pain radiating to the back, arm, shoulder, or jaw; which is abrupt onset, tearing or is exertional; with associations such as breathlessness, hemoptysis, or syncope, and

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

abnormal observations (Acute care toolkit, RCP 2019).

If the diagnosis is clear and there are no red flags, the patient can be managed as appropriate. For instance, suitable antacids and proton pump inhibitors for reflux and simple analgesia for muscular pain, noting that NSAIDs cannot be used in the third trimester because they can cause premature closure of the fetal ductus arteriosus (Acute care toolkit, RCP 2019). If the cause of the pain is due to more significant pathology or the diagnosis is unclear, then timely referral to secondary care is required.

Palpitations

Palpitations occur frequently during pregnancy (Silversides, 2020). They can be a common physiological symptom during pregnancy (Acute care toolkit, RCP 2019), and the differential diagnosis includes:

- Cardiac arrhythmia
- Anemia
- Thyrotoxic states
- Pulmonary embolism
- Sepsis

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
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www.mecsj.com/

Cardiac arrhythmias are frequently associated with structural heart disease, so an arrhythmia during pregnancy requires clinical evaluation for structural heart disease (Silversides, 2020). Red flag features include a persistent, severe tachycardia, the presence of syncope or chest pain, a family history of sudden death, or an index history of structural heart disease of previous cardiac surgery (Acute care toolkit, RCP 2019). The most common arrhythmia in women with structurally normal hearts is paroxysmal supraventricular tachycardia (Imazio, 2020). Primary care investigations will depend how significantly the patient's vital observations are affected and what the underlying cause of the palpitations is thought to be.

Headache

It is estimated that a third of pregnant women experience a headache (Bhatia et al, 2020). Primary headaches usually occur in the first trimester (Bhatia et al, 2020). They include such as migraine, tension type headaches and rarely, cluster headaches. These primary headaches have typical features (Headache Classification Committee, 2018). Most women with pre-existing migraine notice a reduction in frequency and

severity of attacks, which may be due to a reduction in reproductive hormonal fluctuation (Narayan & Nelson-Piercy, 2017). Primary headaches account for most headaches in pregnancy, however, increased coagulability can increase the risk of secondary headaches, including stroke and cerebral venous thrombosis, at any time during the pregnancy (Silversides, 2020).

Examples of secondary headaches includes:

- Pre-eclampsia: Most common in the third trimester but can present from 20 weeks gestation. Blood pressure is greater than 140/90 mmHg and urinary protein: creatinine ratio (PCR) greater than 50 (Acute care toolkit, RCP 2019). Pre-eclampsia often occurs de novo, but women with pre-existing hypertension may develop superimposed pre-eclampsia, and gestational hypertension may also evolve into pre-eclampsia (Narayan & Nelson-Piercy, 2017).
- Idiopathic intracranial hypertension: Can occur at any time during pregnancy. Typically, it is a daily progressive non-pulsating headache, worse with lying down, with a transient

feeling of darkening in the eyes and pulsating noise in the ears (Negro et al, 2017).

- Central vein thrombosis: Most commonly occurs in the third trimester (Acute care toolkit, RCP 2019). Risk factors include hypertension, prothrombotic conditions, advanced maternal age, infections, and excessive vomiting (Negro et al, 2017).
- Stroke: three times more common among pregnant than among nonpregnant individuals aged 15–44 years, occurring in 30 in 100 000 pregnancies (Khalid et al 2019).
- Meningitis / encephalitis: Streptococcus pneumoniae and Listeria monocytogenes infections are more common during pregnancy (Acute care toolkit, RCP 2019).
- Brain tumor: Pituitary tumors account for 10% to 22% of all neoplasms of the brain. Pituitary apoplexy is a rare cause of sudden and severe headache during pregnancy (Negro et al, 2017).

Red flag features for headaches include sudden-onset or worst ever headache ever; a headache that takes longer than usual to resolve or persists for more than 48 hours, or accompanied by fever, seizures, focal neurology, photophobia, or diplopia (Acute care toolkit, RCP 2019).

If clinical assessment supports a diagnosis of a primary headache, first line treatments comprise lifestyle measures, such as adequate sleep, and simple analgesia should be suggested, with use of NSAID avoided in the third trimester. Any associated nausea and vomiting may be treated with metoclopramide, cyclizine or prochlorperazine (Bhatia et al, 2020). Cluster headaches will normally require involvement of secondary care (Jügens, 2009).

Secondary causes of headache will require specialist clinician involvement, the urgency of which will depend on etiology considered. Preeclampsia must be excluded in all pregnant women with headache who are more than 20 weeks' gestation (Robbins et al 2015). Symptoms, other than headache include facial and peripheral swelling, nausea, vomiting, visual disturbances and right upper quadrant or epigastric pain (Narayan & Nelson-Piercy, 2017).

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
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www.mecsj.com/

The presence of red flag symptoms warrants emergency assessment in secondary care.

Breathlessness

Breathlessness can be physiological or pathological finding in pregnancy. Physiological breathlessness affects up to 75% of pregnancies (Acute care toolkit, RCP 2019). It can occur in the first trimester and it is thought to arise from raised progesterone levels increasing the respiratory drive to be increased and oxygen requirements increasing as the pregnancy progresses (Bhatia et al, 2020). It is described as 'air hunger' and can interrupt normal speech (Acute care toolkit, RCP 2019).

Pathological causes for breathlessness include:

- Anemia: Associated features include lethargy and conjunctival pallor. It can occur throughout pregnancy, but most encountered in the third trimester (Acute care toolkit, RCP 2019).
- Asthma: During pregnancy, asthma can improve in one third of patients, one third remain the same, and one third deteriorate (Bhatia et al, 2020).
- Pulmonary embolism: As above for chest pain. Classic features

are sudden onset of dysnea, together with pleuritic chest pain and possibly hemoptysis (Bhatia et al, 2020).

- Pneumonia: This is uncommon in pregnancy, but there is increased susceptibility to viral infections, including Corona virus, and varicella zoster pneumonitis (Bhatia et al, 2020) as well as TB (Acute care toolkit, RCP 2019). Pregnant patients can have the same cardinal symptoms of the Corona virus infection ie. high temperature, a new, continuous cough or a loss or change to your normal sense of smell or taste (RCOG, 2020). However, they are less likely to have fever or myalgia than non-pregnant women of the same age. (RCOG, 2020)
- Dilated cardiomyopathy: Most commonly occurs postnatally but can occur at any stage of pregnancy, especially with advanced maternal age, multiparity, pre-eclampsia and hypertension (Silversides, 2020).
- Pneumothorax: Can occur at any stage of gestation, but most commonly after vaginal delivery (Acute care toolkit, RCP 2019).

Assessment should include obtaining vital signs at rest and exertion (Bhatia et al, 2020). Red flag symptoms include sudden onset breathlessness, associated chest pain or syncope, tachypnoea, tachycardia or reduced oxygen saturations, orthopnea, paroxysmal nocturnal dyspnea, palpitations, calf swelling, fever or possibility of sepsis (Acute care toolkit, RCP 2019; Silversides, 2020).

Treatment and place of treatment will be determined by the diagnosis, its severity, and the presence or not of red flag features. Specialist same day/urgent opinion is required if breathlessness is associated with red flags features (Bhatia et al, 2020). In the absence of red flag features, and if the patient has mild breathlessness and normal vital signs, reassurance that the breathlessness is most likely the result of the course of pregnancy and to return for review is symptoms persist or worsen (Bhatia et al, 2020).

Inhaled corticosteroids can be prescribed as normal during pregnancy, and oral steroids, recommended for severe asthma, maybe used together with an explanation that the benefits outweigh the risks. (Silversides, 2020; Hasegawa, 2015).

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
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www.mecsj.com/

Acute severe asthma requires secondary care management and continuous fetal monitoring (Acute care toolkit, RCP 2019). There is evidence that physicians under prescribe systemic steroids when managing pregnant patients with asthma, resulting in worse outcomes for these women (Hasegawa, 2015).

Nausea and vomiting

Causes of nausea and vomiting in pregnancy include:

- Morning sickness (nausea and vomiting of pregnancy)
- Infections such as gastroenteritis, pyelonephritis
- Molar pregnancy or multiple pregnancies
- Abdominal causes including gall bladder problem
- Medication such as antibiotics and iron.
- Pre – eclampsia
- Acute fatty liver of pregnancy

Nausea and vomiting of pregnancy (NVP), or "morning sickness," affects approximately 80 percent of pregnancies (Quinlan & Ashley Hill, 2003).

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
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www.mecsj.com/

Symptoms range from mild to severe and the most severe form, hyperemesis gravidarum, occurs in 0.5%–2% of all pregnancies (Gregory & Tuladhar,2018). NVP should only be diagnosed when it starts in the first trimester of pregnancy and other causes of nausea and vomiting have been excluded (RCOG,2016).

Hyperemesis gravidarum is defined as protracted nausea and/or vomiting, with a triad of more than 5% pre-pregnancy weight loss, dehydration, and electrolyte imbalance (RCOG, 2016).

Acute fatty liver in pregnancy is more common in multiple pregnancies, and usually presents in the third trimester. Features include severe nausea and vomiting, right upper quadrant pain, and anorexia. There is associated abnormal LFTs and hypoglycemia (Bhatia et al, 2020).

Management of nausea and vomiting will depend on the extent of physiological disturbance that has resulted and the underlying cause that is identified or suspected. Red flag features include severe abdominal pain, weight loss of more than 5% pre- pregnancy level, fever, hypertension, and proteinuria. It is important to remember that maternal mental well-being can be adversely affected (Heitmann et al 2017) and

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

co-existing illness, such as epilepsy, where control with oral medication is crucial (Narayan & Nelson-Piercy, 2017).

The Royal College of Obstetricians and Gynaecologists has provided guidance on the management of NVP and hyperemesis gravidarum (RCOG, 2016). The Pregnancy-Unique Quantification of Emesis (PUQE) is used to help guide management. A score is attached to the answer to three questions. PUQE-24 score is sum of answers to each of the three questions:

1. In the last 24 hours, for how long have you felt nauseated or sick to your stomach?
   - Not at all (score 1); 1 hour or less (score 2); 2–3 hours (score 3); 4–6 hours (score 4); More than 6 hours (score 5)
2. In the last 24 hours have you vomited or thrown up?
   - 7 or more (score 5); 5–6 times (score 4) 3–4 times; (score 3) 1-2 times (score 2); I did not throw up (score 1)
3. In the last 24 hours how many times have you had retching or dry heaves without bringing up anything?
   - No time (score 1); 1–2 times (score 2); 3–4 times (score 3); 5–6

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

times (score 4); 7 or more (score 5)

According to the overall PUQE score, a mild case scores ≤ 6; a moderate case scores 7 – 12; a severe case score 13 – 15. Mild cases with no complications are suitable for management in primary care with lifestyle and dietary changes (such as using ginger) and antiemetics if necessary (RCOG, 2016).

First line antiemetics to use orally comprise:

- Cyclizine 50 mg PO
- Prochlorperazine 5–10 mg 6–8 hourly PO
- Promethazine 12.5–25 mg 4–8 hourly PO
- Chlorpromazine 10–25 mg 4–6 hourly PO

Ambulatory daycare management should be used for suitable patients when community/primary care measures have failed and where the PUQE score is less than 13.

Inpatient management should be considered if any of the following apply:

a. continued nausea and vomiting and inability to keep down oral antiemetics

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

b. continued nausea and vomiting associated with ketonuria and/or weight loss (greater than 5% of body weight), despite oral antiemetics

c. confirmed or suspected comorbidity (such as urinary tract infection and inability to tolerate oral antibiotics).

Abdominal pain

Establishing a clinical diagnosis for abdominal pain in pregnancy is difficult due to the variety of potential causes from many different body systems (Jones et l, 2012). Anatomical and physiological changes during pregnancy can lead to different features of a condition in comparison to the non-pregnant state. For instance, a pregnant patient may have heartburn, constipation, diarrhea, urinary symptoms, or just general malaise as the only features of acute appendicitis and pain maybe not be at McBurney's point or anywhere on the right side of the abdomen (Weston & Moroz 2015).

Non obstetric causes include:

- Gastroesophageal reflux
- Peptic ulcer
- Biliary disease

- Pancreatitis
- Renal calculi
- Appendicitis
- Constipation
- Pyelonephritis

There are a variety of non-obstetric causes for abdominal pain in pregnancy. Gastroesophageal reflux disease is common in pregnancy and is attributed to progesterone mediated relaxation (Gregory & Tuladhar,2018). Oral iron supplements can cause abdominal pain which is usually mild, and stools may be noticeably darkened (Weston & Moroz 2015).

During pregnancy, the incidence of gallstones is estimated to be between 3% and 12% (Al-Hashem et al, 2009), however pregnancy is not considered to increase complications of gallstones such as cholangitis (Rana, P et al 2020). Acute pancreatitis affects approximately 1 in 1000–5000 and usually occurs late in the third trimester or in the early postpartum period (Al-Hashem et al, 2009).

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
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www.mecsj.com/

Ectopic pregnancy must be excluded in any woman with a positive pregnancy test complaining of abdominal pain. This can be done by ultrasound and correlation with blood human chorionic gonadotrophin levels.

Obstetric causes include:

- Ectopic pregnancy
- Spontaneous abortion
- Placental abruption
- Pre-eclampsia
- Acute fatty liver of pregnancy
- Chorioamnionitis
- Uterine rupture
- Braxton Hicks contractions

The different obstetric causes for abdominal pain occur at certain stages of pregnancy. In the first trimester, in the absence of an unconfirmed intra uterine pregnancy, ectopic pregnancy must be excluded in any woman with a positive pregnancy test complaining of abdominal pain (Weston & Moroz 2015). From the second trimester, conditions such as placental abruption and pre-eclampsia are possible causes of pain.

In placental abruption, the uterus is typically woody hard on palpation, there is severe abdominal pain and vaginal bleeding may occur (Bhatia et al, 2020).

Chorioamnionitis, which typically has an offensive green vaginal discharge, can be difficult to differentiate from appendicitis unless there is a history of ruptured membranes. However, occult chorioamnionitis can occur with intact membranes in the context of listeriosis (Skubic & Salim, 2017).

Red flag features for abdominal pain include vaginal bleeding, green or offensive discharge or fluid loss, constant or severe abdominal pain, or moderate pain that is prolonged and not settling with oral analgesia (Bhatia et al, 2020).

Urinary Tract Infection (UTI)

Frequency, urgency and nocturia are normal as the uterus enlarges in the later stages of pregnancy (Gregory & Tuladhar,2018 ;(Bhatia et al, 2020). Factors such as ureteral dilatation, increased bladder volume and reduced bladder tone can lead to urinary statis and ureterovesical reflux, encouraging the development of UTI in pregnancy (Delzell

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

Lefevre, 2000). Furthermore, medical interventions like urethral instrumentation and catheterisation increase the likelihood of ascending bacteriuria (McCormick et al, 2011).

The organisms causing UTIs during pregnancy are the same as in nonpregnant patients, with Escherichia coli accounting for 80 to 90 percent of infections (Delzell & Lefevre, 2000). There are three typical presentations of UTI in pregnancy McCormick et al, 2011):

- Asymptomatic bacteriuria
- Acute cystitis
- Acute pyelonephritis

Asymptomatic bacteriuria:

Significant bacteriuria can exist in at least 6% of asymptomatic pregnant women and if untreated can lead to symptomatic cystitis (up to 30%), pyelonephritis (up to 50%), preterm labour and delivery and prematurity, low birthweight and increased perinatal mortality (McCormick et al, 2011).

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

Acute cystitis:

Should be suspected in pregnant women who have dysuria, frequency, urgency, and suprapubic pain in the absence of systemic illness (Hooton & Gupta, 2019).

Acute pyelonephritis:

Is suggested by the presence of pyrexia, flank pain, nausea/vomiting, with or without the typical symptoms of cystitis, and is confirmed by the finding of bacteriuria in the setting of these symptoms (Hooton & Gupta, 2019).

There are several red flag features associated with dysuria. They include severe abdominal or flank pain; rigors; vomiting; rigid or tender uterus; abnormal vital signs, and they will necessitate urgent same day secondary care assessment (Bhatia et al, 2020).

Management of acute pyelonephritis in pregnant women includes hospital admission for parenteral antibiotics (Hooton & Gupta, 2019)

When there are more than 100,000 colony-forming units of one bacterial species on urine culture, antibiotics need to be commenced early is necessary to reduce the risk of pyelonephritis, even in those

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

who are asymptomatic (Gregory & Tuladhar,2018). A seven-day course of antibiotics for urinary tract infection in pregnancy is required (NICE, 2018).

Nitrofurantoin is the first-choice antibiotic for urinary tract infection in pregnancy, other than at term because of risk of severe hemolytic anemia following birth (Gregory&Tuladhar,2018). Trimethoprim/sulfamethoxazole is generally not prescribed because of risks of neural tube defects in early pregnancy and methemoglobinemia in the newborn (Gregory & Tuladhar,2018).

If nitrofurantoin is not suitable, or the patient fails to improve in 48 hours, amoxicillin (if culture results confirm susceptibility) or cefalexin maybe used, or another antimicrobial identified after consultation with a microbiologist (Bhatia et al, 2020).

In situations where dysuria occurs in the absence of bacteriuria or there is persistent dysuria despite successful treatment of bacteriuria, testing for sexually transmitted infections is required (Hooton & Gupta, 2019)

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
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www.mecsj.com/

Itchy rash

Timing of the onset of symptoms and the appearance of the rash can allow a diagnosis to be made.

Polymorphic eruption of pregnancy:

Occurs in 1:130-300 pregnancies (Kroumpouzos & Cohen, 2001).

Timing:

- Usually occurs in the first pregnancy and occurs in the third trimester.

Rash:

- Never bulla
- Usually, the rash starts on the abdomen, often on the striae
- Pruritic urticarial papules coalescing into plaques.
- Usually, the rash starts on the abdomen, often first appearing on the striae
- Umbilicus region is usually spared.
- Localized; or spreads to the buttocks and proximal thighs, or widespread and generalized.
- May later become widespread non-urticated erythema,

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
ISSN: 2616-9185
www.mecsj.com/

with eczematous lesions and vesicles.

There is no specific treatment, however, antihistamines and topical steroids may be used to treat pruritus. The rash typically resolves one to two weeks after delivery. There are no adverse pregnancy outcomes (Vaughan Jones et al, 2014).

Atopic eruption of pregnancy:

It is the most common dermatosis of pregnancy (Vaughan Jones et al, 2014). 20% is an exacerbation of pre-existing eczema in pregnancy; 80% experience atopic skin changes for the first time or after a long remission (Vaughan Jones et al, 2014).

Timing:

- Usually occurs in the first trimester.

Rash:

- It is more likely in women with a history of atopic eczema.
- Eczematous lesions, affecting typical atopic sites such as the face, neck, upper chest, and flexor aspects of the limbs.

Multi-Knowledge Electronic Comprehensive Journal For Education And Science Publications (MECSJ)
Issue (40),2021
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www.mecsj.com/

- Small erythematous papules disseminated on the trunk and limbs, and larger 'prurigo nodules' (firm itchy bumps) found mainly on the shins and extensor surfaces of the arms.

Treatment is normally with emollients and topical corticosteroids. The pruritis tends to improve soon after childbirth, but the rash may persist longer.

Pemphigoid gestationis:

Rare, self-limiting autoimmune disorder. Its incidence varies from 1 in 2000 to 1 in 50 000-60 000 pregnancies (Vaughan Jones et al, 2014).

There is 20% risk of pre-term labour (Semkova & Black, 2009).

Timing:

- Usually in the second or third trimester.

Rash:

- Often preceded by an intense itch
- Initially urticarial papules and plaques on the abdomen

- Often occurs at the umbilicus
- Can spread to cover the entire body.
- Progresses to form tense blisters like bullous pemphigoid

Patients suspected of having pemphigoid gestationis should be referred urgently to dermatology (Cunliffe, 2015), for shared care involving obstetrician, dermatologist and paediatrician.

4. Conclusion:

The family medicine doctor will be involved as part of a multidisciplinary team of professionals looking after a pregnant patient. There are several health conditions that a pregnant patient can present to a family medicine clinic. These conditions can vary from chest pain to a rash. It is important to understand that pregnancy will alter the normal physiological range for certain tests. It is also important to detect those alarming symptoms or findings, the so called “red flags” that point to serious underlying illness. The ability to manage those conditions which are safe to do so in the community and recognize those which require specialist attention is vital to ensure that the quality of care for the patient who is pregnant is no less than when she is not.

References:

Acute care toolkit 15: Managing acute medical problems in pregnancy. London: RCP 2019. www.rcplondon.ac.uk/act15

Al-Hashem, H., Muralidharan, V., Cohen, H., & Jamidar, P. A. (2009). Biliary Disease in Pregnancy With an Emphasis on the Role of ERCP. *Journal of Clinical Gastroenterology, 43*(1), 58–62. https://doi.org/10.1097/mcg.0b013e31818acf80

Bashir, M., E. Abdel-Rahman, M., Aboulfotouh, M., Eltaher, F., et al. (2018). Prevalence of newly detected diabetes in pregnancy in Qatar, using universal screening. *PLOS ONE,* 13(8), e0201247. https://doi.org/10.1371/journal.pone.0201247

Bhatia, M., Mahtani, K. R., Rochman, R., & Collins, S. L. (2020). Primary care assessment and management of common physical symptoms in pregnancy. *BMJ*, m2248. https://doi.org/10.1136/bmj.m2248

Cunliffe, T. (2015) Pemphigoid gestationis (pemphigoid of pregnancy) Primary Care Dermatology Society http://www.pcds.org.uk/clinical-guidance/pregnancy-related-conditions

Delzell, J. E., Jr, & Lefevre, M. L. (2000). Urinary tract infections during pregnancy. *American family physician*, *61*(3), 713–721.

Green, L. J., Mackillop, L. H., Salvi, D., Pullon, R., Loerup, L., et al. (2020). Gestation-Specific Vital Sign Reference Ranges in Pregnancy. Obstetrics & Gynecology, 135(3), 653–664. https://doi.org/10.1097/aog.0000000000003721

Gregory, D. S., Wu, V., & Tuladhar, P. (2018). The Pregnant Patient: Managing Common Acute Medical Problems. American family physician, 98(9), 595–602.

Hasegawa, K., Cydulka, R. K., Sullivan, A. F., Langdorf, M. I., Nonas, S. A., Nowak, R. M., … Camargo, C. A. (2015). Improved Management of Acute Asthma Among Pregnant Women Presenting to the ED * *From the Department of Emergency Medicine, Massachusetts General Hospital, Harvard Medical School, Boston, MA; the Department of Emergency Medicine, MetroHealth Medical Center, Case Western Reserve University, School of Medicine, Cleveland, OH; the Department of Emergency Medicine, University of California Irvine Medical Center, Orange, CA; the Division of Pulmonary and Critical Care Medicine, Oregon Health and

Science University Hospital, Portland, OR; the Department of Emergency Medicine, Henry Ford Hospital, Detroit, MI; and the Department of Emergency Medicine, Stanford University Medical Center, Stanford, CA. *Chest, 147*(2), 406–414. https://doi.org/10.1378/chest.14-1874

Headache Classification Committee of the International Headache Society (IHS) The International Classification of Headache Disorders, 3rd edition. (2018). *Cephalalgia, 38*(1), 1–211. https://doi.org/10.1177/0333102417738202

Heitmann, K., Nordeng, H., Havnen, G. C., Solheimsnes, A., & Holst, L. (2017). The burden of nausea and vomiting during pregnancy: severe impacts on quality of life, daily life functioning and willingness to become pregnant again – results from a cross-sectional study. *BMC Pregnancy and Childbirth, 17*(1). https://doi.org/10.1186/s12884-017-1249-0

Hooton TM, Gupta K. Urinary tract infections and asymptomatic bacteriuria in pregnancy. (2019) UptoDate https://www.uptodate.com/contents/urinary-tract-infections-and-asymptomatic-bacteriuria-in-pregnancy#! Accessed 18/12/2020

Ibrahim, W. H., Rasul, F., Ahmad, M, et al. (2018) Asthma knowledge, care,

and outcome during pregnancy: The QAKCOP study. *Chronic Respiratory Disease, 16*: 1–10.

Imazio M. (2020) Acute pericarditis: Clinical presentation, diagnostic evaluation, and diagnosis. UpToDate. https://www.uptodate.com/contents/acute-pericarditis-clinical-presentation-diagnostic-evaluation-and-diagnosis accessed 18/12/2020

Jones, D., Wilson, J., Warnock, N., & Alexander, D. J. (2012). Abdominal pain in pregnancy. *BMJ, 345*(oct17 1), e6818–e6818. https://doi.org/10.1136/bmj.e6818

Jügens, T., Schaefer, C., & May, A. (2009). Treatment of Cluster Headache in Pregnancy and Lactation. *Cephalalgia, 29*(4), 391–400. https://doi.org/10.1111/j.1468-2982.2008.01764.x

Khalid, A. S., Hadbavna, A., Williams, D., & Byrne, B. (2019). A review of stroke in pregnancy: incidence, investigations and management. *The Obstetrician & Gynaecologist, 22*(1), 21–33. https://doi.org/10.1111/tog.12624

Kroumpouzos, G., & Cohen, L. M. (2001). Dermatoses of pregnancy. *Journal of the American Academy of Dermatology, 45*(1), 1–22.

https://doi.org/10.1067/mjd.2001.114595

McCormick, T., Ashe, R.G., & Kearney, P.M. (2011). Urinary tract infection in pregnancy. *The Obstetrician & Gynaecologist. 10*. 156 - 162. 10.1576/toag.10.3.156.27418.

Narayan, B., & Nelson-Piercy, C. (2017). Medical problems in pregnancy. *Clinical Medicine, 17*(3), 251–257. https://doi.org/10.7861/clinmedicine.17-3-251

Negro, A., Delaruelle, Z., Ivanova, T. A., Khan, S., Ornello, R., Raffaelli, B., et al. (2017). Headache and pregnancy: a systematic review. *The Journal of Headache and Pain, 18(*1). https://doi.org/10.1186/s10194-017-08160

NICE National Institute for Health and Care Excellence. Urinary tract infection (lower): antimicrobial prescribing. 2018. https://www.nice.org.uk/guidance/ng109/chapter/recommendations Accessed 17/12/2020

RCOG Coronavirus infection and pregnancy. Royal College of Obstetricians and Gyneacologists. Updated on 22 December 2020. https://www.rcog.org.uk/en/guidelines-research-services/guidelines/coronavirus-pregnancy/covid-19-virus-infection-and-

pregnancy#coronavirus

RCOG. The Management of Nausea and Vomiting of Pregnancy and Hyperemesis Gravidarum. Green-top Guideline No. 69. 2016. Royal College of Obstetricians and Gynaecologists. https://www.rcog.org.uk/globalassets/documents/guidelines/green-top-guidelines/gtg69-hyperemesis.pdf. Accessed 18/12/2020

Rana, P., Gupta, P., Chaluvashetty, S. B., Mittal, A., Kalra, N., Dutta, U., & Singh Sandhu, M. (2020). Interventional radiological management of hepatobiliary disorders in pregnancy. Clinical and Experimental Hepatology, 6(3), 176–184. https://doi.org/10.5114/ceh.2020.99508

Robbins, M. S., Farmakidis, C., Dayal, A. K., & Lipton, R. B. (2015). Acute headache diagnosis in pregnant women. *Neurology, 85*(12), 1024–1030. https://doi.org/10.1212/wnl.0000000000001954

Quinlan J.D., & Ashley Hill, D. (2003) Nausea and Vomiting of Pregnancy. *Am Fam Physician. 68* (1):121-8

Semkova, K., & Black, M. (2009). Pemphigoid gestationis: Current insights into pathogenesis and treatment. European Journal of Obstetrics & Gynecology and Reproductive Biology, 145(2), 138–144.

https://doi.org/10.1016/j.ejogrb.2009.05.012

Silversides C, Harris L, Yap S-C. (2020) Supraventricular arrythmias during pregnancy. UpToDate. https://www.uptodate.com/contents/supraventricular-arrhythmias-during-pregnancy#! accessed 18/12/2020

Skubic, J. J., & Salim, A. (2017). Emergency general surgery in pregnancy. *Trauma Surgery & Acute Care Open, 2*(1), e000125. https://doi.org/10.1136/tsaco-2017-000125

Vaughan Jones, S., Ambros-Rudolph, C., & Nelson-Piercy, C. (2014). Skin disease in pregnancy. *BMJ, 348*(jun03 3), g3489–g3489. https://doi.org/10.1136/bmj.g3489

Weston, P., & Moroz, P. (2015). Appendicitis in pregnancy: how to manage and whether to deliver. *The Obstetrician & Gynaecologist, 17*(2), 105–110. https://doi.org/10.1111/tog.12188