GUIDELINE FOR THE USE OF LOW DOSE ASPIRIN IN PREGNANCY

TARGET AUDIENCE	All Midwifery and Medical Staff providing maternity care in NHS Lanarkshire.
PATIENT GROUP	All pregnant women booked for maternity care within NHS Lanarkshire

Clinical Guidelines Summary

- Aspirin known as Acetylsalicyclic acid irreversibly inhibits prostaglandin H synthase in platelets and thereby blocks the formation of thromboxane A2 which is a potent vasoconstrictor and platelet aggregant. Due to this property and its safety profile, aspirin at low doses has been widely used in obstetric practice.

- **The use of low dose aspirin commenced at <16 weeks' gestation has been shown to significantly reduce the risk of pre-eclampsia (in particular severe pre-eclampsia leading to delivery at <34 weeks' gestation) and fetal growth restriction.**

- National guidelines advocate the use of low dose aspirin (LDA) from 12 weeks' gestation until delivery. NICE guideline 133- Hypertension in Pregnancy: Diagnosis and Management (2019) recommend 75 to 150mg once daily and RCOG Green-top Guideline 72 -Care of Women with Obesity in Pregnancy, have recommended the use of 150mg once daily in women with more than one moderate risk factor.

- In NHSL there is agreement that the majority of women will be suitable and commenced on Aspirin 150 mg (See Contraindications and cautions)

- This guideline DOES NOT apply to women who may have a diagnosis of possible recurrent early miscarriage

Who should receive LDA

Women with the Risk factors for the development of pre-eclampsia and fetal growth restriction during pregnancy should be commenced on LDA following discussion. The detailed list of risk factors is provided in the following page.

When should LDA be commenced?

National guidelines advocate the use of low dose aspirin (LDA) from 12 weeks' gestation. Low dose aspirin commenced < 16 weeks' gestation has the maximal risk reduction for both conditions (pre-eclampsia and fetal growth restriction) but there may still be marginal / modest benefit in risk reduction when starting
> 16 weeks. Women should be informed of this.

What is the recommended dosage?

We recommend 150mg of LDA to be commenced from 12 weeks. However, based on individual circumstances this dosage may be amended.

When should LDA be taken?

Many drugs have now been shown to have differing effects in relation to circadian rhythms. Low dose aspirin administered at night has been shown to be significantly more effective in reducing the risk of pre-eclampsia and fetal growth restriction than when administered in the morning (should not be taken on an empty stomach).

What are the contraindications to Aspirin?

Hypersensitivity to aspirin or other NSAIDs
Active peptic ulcer disease
Active bleeding in pregnancy

- Threatened miscarriage
- Expanding retro placental haematoma
- APH

Underlying bleeding disorder

- Von Willebrands
- ITP
- Factor deficiency
- Severe Gestational Thrombocytopenia

Caution

Women should be advised of an increased risk of gastrointestinal bleeds with concomitant use of certain medications such as the Non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroids and Selective Serotonin Reuptake Inhibitors (SSRIs). Gastro protective agents to be considered.

The Renal Association recommend 75-150mg to all women with Chronic Kidney Disease, so 150mg could be a treatment option for patients with renal impairment, however this would be

outside the product license which states it is CI in severe renal impairment. **Pregnancy and CKD, Renal Association clinical guidelines (Sept 2019):** Wiles, K., Chappell, L., Clark, K. *et al.* Clinical practice guideline on pregnancy and renal disease. *BMC Nephrol* **20,** 401 (2019). https://doi.org/10.1186/s12882-019-1560-2

In NHSL we recognize the importance of LDA in preventing maternal and fetal complications in women with renal disease and recommend these women be placed on Aspirin 150 mg. The women will be under consultant care.

Indications for low dose aspirin

Pregnant women at high risk of pre-eclampsia:

Women with **one high risk factor** or **two moderate risk factors** for pre-eclampsia should be commenced on low dose aspirin once daily during night time from 12 weeks provided there are no contraindications to aspirin use.

Risk factors provided below

High Risk Factors
Hypertensive disease during a previous pregnancy
Chronic kidney disease
Autoimmune conditions such as systemic lupus erythematosus or antiphospholipid syndrome
Type 1 or type 2 diabetes
Chronic hypertension

Moderate Risk Factors
First pregnancy
Age 40 years or older
Pregnancy interval of greater than 10 years
BMI of 35 or greater at first visit
Family history of pre-eclampsia
Multiple pregnancy

Pregnant women at high risk of Fetal Growth Restriction

Maternal risk factor
Smoker at booking > 11 cigarettes daily
Drug misuse

Previous pregnancy history
Previous SGA (< 10th centile)
Previous still birth

Maternal medical history
Renal impairment
Antiphospholipid antibody syndrome
Uncontrolled hyperthyroidism

Current Pregnancy complications
Low PAPPA < 0.415 MOM

A risk factor assessment for pre-eclampsia and fetal growth restriction should be undertaken via Badgernet at booking and low dose aspirin commenced as soon as possible after 12 weeks for at risk groups. Robust processes should be in place to ensure PAPP-A results, if 1st trimester screening is undertaken, are actioned as soon as available.

Duration of usage of LDA

Women on Aspirin Only

- Continue Aspirin until 36+6 weeks of gestation.

Unplanned admission

- Risk should be assessed on individual basis for patients who could be at higher risk of blood loss / anaesthetic complications

Women on LDA and concurrently on LMWH/(Enoxaparin)

- Women with additional risk factors for thromboembolism are likely to be commenced on prophylactic Low Molecular Weight Heparin (LMWH) in addition to low dose aspirin.
- They should be under consultant care

Women on LDA & LMWH/Enoxaparin

- These women should have an established obstetric plan put in place and clearly documented

Planned Admission

- **Stop Aspirin 3 days before hospital admission if before 36+6**
- **Enoxaparin Prophylactic dose: Stop 12 hours before planned Obstetric admission**.
- **Enoxaparin therapeutic Dose/ BD dosing: Stop 24 hours before planned Obstetric admission**.
- Proceed with obstetric plan/ regional anaesthesia as required
- These patients are considered at higher risk of obstetric & anaesthetic complications – senior input is required.

Unplanned Admission

- Failure to stop Enoxaparin in a timely manner is a contraindication for regional anaesthesia. Risks and benefits of operative procedures should be weighed against the risk of GA/ increased risk of perioperative bleeding events.
- If Enoxaparin is stopped in a timely manner, Aspirin should not be considered as a contraindication for regional technique. Benefits of regional anaesthesia techniques (epidural/spinal) should be weighed against the relatively increased risk of spinal/ epidural haematoma and discussed with patient.

Women on alternative antithrombotic agents or anticoagulant agents

Women on alternative antithrombotic agents or anticoagulant agents will have a tailored anticipatory care plan for delivery that should be followed. (These women will usually have a plan put in place by their obstetrician/ haematologist. If any concerns case should be discussed with the on-call obstetrician, anaesthetist and haematologist)

Women who develop bleeding in pregnancy and are on aspirin and / or LMWH and or other antithrombotic or anticoagulant agents should seek medical advice on whether to continue therapy.

Women receiving antenatal LMWH should be advised that if they have any vaginal bleeding or once labour begins they should not inject any further LMWH and seek medical advice.

References/Evidence

Roberge S, Nicolaides K, Demers S, Hyett J, Chaillet N, Bujold E. The role of aspirin dose on the prevention of preeclampsia and fetal growth restriction: systematic review and meta-analysis. *Am J Obstet Gynecol* 2017; **216**: 110–20. https://doi.org/10.1016/j.ajog.2016.09.076

NICE Guideline (NG133) Hypertension in Pregnancy: Diagnosis and management. June 2019
https://www.nice.org.uk/guidance/ng133

RCOG Guideline (GTG 72) Care of Women with Obesity in Pregnancy. November 2018
https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg72/

Ayala D, Ucieda R, Hermida R C. Chronotherapy With Low-Dose Aspirin for Prevention of Complications in Pregnancy. Chronobiol Int. 2013;30 (1-2): 260-279.
https://pubmed.ncbi.nlm.nih.gov/23004922/

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https://www.england.nhs.uk/wp-content/uploads/2019/07/saving-babies-lives-care-bundle-version-two-v5.pdf

Aspirin use during pregnancy and the risk of bleeding complications: a Swedish population-based cohort study. Am J OG: https://doi.org/10.1016/j.ajog.2020.07.023

The role of aspirin dose on the prevention of preeclampsia and fetal growth restriction: systematic review and meta-analysis. Am J OG
http://www.ncbi.nlm.nih.gov/pubmed/27640943

Assessment of Fetal Growth in Singleton Pregnancy - NHS Lanarkshire Maternity Guideline 2020

Appendices

1. Governance information for Guidance document

Lead Author(s):	Dr H Godsman / Dr R Rajagopal Reviewed By Dr R Rajagopal 2024
Endorsing Body:	Clinical Effectiveness Maternity Group
Version Number:	
Approval date	February 2024
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Responsible Person (if different from lead author)	

CONSULTATION AND DISTRIBUTION RECORD	
Contributing Author / Authors	
Consultation Process / Stakeholders:	

Distribution	

CHANGE RECORD			
Date	**Lead Author**	**Change**	**Version No.**
		e.g. Review, revise and update of policy in line with contemporary professional structures and practice	1
			2
			3
		.	4
			5

2.You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

e.g. supporting documents for implementation of guideline, patient information, specific monitoring requirements for secondary and primary care clinicians, dosing regimen/considerations according to weight and/or creatinine clearance

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Lead Author	**Dr H Godsman / Dr R Rajagopal**	**Date approved**	**February 2024**
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