Annex A - Introduction and Background

In this guide

In this guide

Introduction

1. The Scientific Advisory Committee on Nutrition (SACN) last considered maternal diet and nutrition in relation to offspring health in its reports on “The influence of maternal, fetal and child nutrition on the development of chronic disease in later life” (SACN, 2011) and on “Feeding in the first year of life” (SACN, 2018). In the latter report, the impact of breastfeeding on maternal health was also considered.

2. In 2019, SACN agreed to conduct a risk assessment on nutrition and maternal health focusing on maternal outcomes during pregnancy, childbirth and up to 24 months after delivery. SACN agreed that, where appropriate, other expert committees would be consulted and asked to complete relevant risk

assessments. A provisional list of chemicals was proposed by SACN Members. However, this was subject to change following discussion by the COT. A scoping paper was presented to the Committee to define the scope of the work from a toxicological safety perspective, and also requesting their input on the selection of candidate chemicals or chemical classes that could be added or removed.

3. As part of this work, the Committee decided it would be useful to consider the use of herbal supplements during pregnancy. A scoping paper reviewed the commonly used herbal supplements during pregnancy. These were promoted by anecdotal evidence and unofficial sources as having various purported benefits. The review was confined to herbal dietary supplements which would be regulated under food law and which would not be considered to be traditional herbal medicines within the remit of the Medicines and Healthcare products Regulatory Agency (MHRA). Among those investigated was raspberry leaf, which is most commonly taken during pregnancy to stimulate and facilitate labour and to shorten its duration.

4. Following this review, the COT agreed that raspberry leaf required further investigation, noting that human, animal and *in vitro* data were available. The main areas of concern included general toxicity to the mother, effects on the development of the fetus or embryo and possible interactions with drugs. Others included potential effects on offspring and on uterine contractility.

5. Based on the COT's recommendations, a more extensive literature search was undertaken to evaluate the safety of raspberry leaf use during pregnancy (for full details of the search method, see Appendix 1). This statement summarises the conclusions drawn by the Committee.

Background

Uses

6. Leaves of the red raspberry plant (**Rubus idaeus**) have been used medicinally in Europe since as early as the sixth century (Beckett *et al*., 1954). The plant is native to Europe, North America and temperate Asia. However, it is mainly grown for commercial use in central and eastern Europe, especially Bulgaria, Macedonia and Romania (European Medicines Agency (EMA), 2014).

7. Traditionally, raspberry leaf has been used for a range of applications, including relieving menstrual cramps and diarrhoea, as an astringent mouthwash and as a treatment for conjunctivitis (EMA, 2014). However, it is most commonly

consumed during pregnancy to stimulate and facilitate labour and to shorten its duration, with a prevalence of use among pregnant women as high as 38%, based on a recent survey in Australia (Farnaghi and Braniff, 2022). In a survey of herbal remedy use performed at the antenatal clinic at Norfolk and Norwich University hospital between November 2007 and February 2008, 23.7% of expectant mothers who responded to the survey reported taking raspberry leaf (Holst *et al*., 2011). Typically, it is taken as tea or tablets but occasionally as a tincture (Simpson *et al*., 2001). Other alleged benefits of raspberry leaf during pregnancy include: alleviation of morning sickness; prevention of post-partum haemorrhage, miscarriage and Braxton Hicks contractions; and stimulation of breast milk production (Patel *et al*., 2004; EMA, 2014).

Health-Based Guidance Values

8. Despite its long history of use, limited research has been undertaken to investigate the safety, efficacy or mechanism of action of raspberry leaf (Bowman *et al*., 2021). Therefore, there are no health-based guidance values (HBGVs) for raspberry leaf use during pregnancy.

Constituents

9. It is unclear what the active constituents of raspberry leaf might be (EMA, 2014). However, it is known to contain a range of different components. Some of the main groups of chemicals in raspberry leaf include: hydrolysable tannins, such as gallotannins; flavonoids, such as kaempferol, quercetin and quercetin glycosides; small quantities of volatile compounds, such as octanol; terpenoids, such as terpinolene; vitamins C and E; minerals, such as calcium, magnesium and zinc; and phenolic acids, such as caffeine and chlorogenic acid (Gudej and Tomczyk, 2004; EMA, 2014).

Existing authorisations

10. In their review on the safety of raspberry leaf, the EMA’s Committee on Herbal Medicinal Products (HMPC) highlighted that while clinical studies had not found a higher incidence of adverse pregnancy outcomes associated with raspberry leaf treatment, treatment durations had generally been short and only a small number of pregnant women were included in the trials (EMA, 2014). It was also highlighted that there were insufficient data on genotoxicity, carcinogenicity, reproductive and developmental toxicity.

11. Due to a lack of genotoxicity data, including the minimum required data on mutagenicity (Ames test), the HMPC could not recommend adding raspberry leaf to the Community list of herbal substances, herbal preparations and combinations thereof for traditional medicinal products (EMA, 2014). Nor did it consider the data on clinical efficacy robust enough to meet the criteria for “well-established medicinal use,” in accordance with Directive 2001/83/EC.

12. Overall, the HPMC concluded that the evidence regarding the efficacy and safety of raspberry leaf during pregnancy and lactation was lacking and that raspberry leaf could not be recommended for pregnant or lactating women, or in children and adolescents under 18 years of age (EMA, 2014).