

Treatment resistant Essential Thrombocythemia in Pregnancy-the use of Interferon alpha (BESREMi)

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Objective:

Essential thrombocythemia (ET) is the commonest myeloproliferative neoplasia in women of childbearing age¹. In pregnancy it is associated with maternal and fetal complications including pregnancy loss, fetal growth restriction and placental abruption². There remains limited evidence for management options. The authors present a case of ET managed in pregnancy using Ropeginterferon alfa-2b (BESREMi).

Case report:

A 25 year old P1 with know JAK2, CAL-R, MPL negative ET was initially being managed with Aspirin and Hydroxycarbamide however later switched to Pegylated Interferon. Two trials of this were complicated by raised liver enzymes and platelets; she was deemed treatment resistant and recommenced on low dose Hydroxycarbamide. Soon after this she became pregnant. She was counselled on both the risks of ET in pregnancy and potential teratogenicity of Hydroxycarbamide; a termination of pregnancy was recommended but she was committed to the pregnancy.

At 8 weeks gestation she was diagnosed with a pulmonary embolism (platelet count >1000). Due to limited treatment options a multidisciplinary discussion was held with a tertiary centre, and she was commenced on BESREMi alongside low dose Hydroxycarbamide. Her platelet count slowly declined and she was monitored regularly in the obstetric haematology clinic. Her pregnancy progressed with no further complications.

She was keen for a vaginal birth however required an emergency caesarean section in labour due to uterine scar dehiscence. A healthy baby was delivered at 38+2 weeks gestation.

Discussion:

The current live birth rate for ET is estimated as 50-57%². Currently there is no specific guideline for management in pregnancy although an algorithm has been suggested by The British Society of Haematologist (figure 1) ¹. Treatment is dictated by disease status, obstetric history and factors which increase the risk of complications. Although currently manufacturers do not recommend the use of Interferon alpha in pregnancy, expert opinion (including the BSH) advise considering these agents in high-risk cases. BESREMi has been approved for the use of treatment of Polycythaemia Vera (PV) without splenomegaly by the European Medicines Agency³ and received FDA approval for the treatment of PV in adults⁴. The commonest side effects include elevated liver enzymes (20% in pooled studies), influenza like symptoms, fatigue, leukopenia and thrombocytopenia⁴. However, its use is not recommended in pregnancy by the manufacturer due to the potential risk of fetal harm. Literature review identified only two published cases of BESREMi being used in pregnancy; both were for the management of PV^{5,6}. Our case adds to this very limited body of evidence, and we believe it is the first documented case of ET treated with BESREMi in pregnancy.

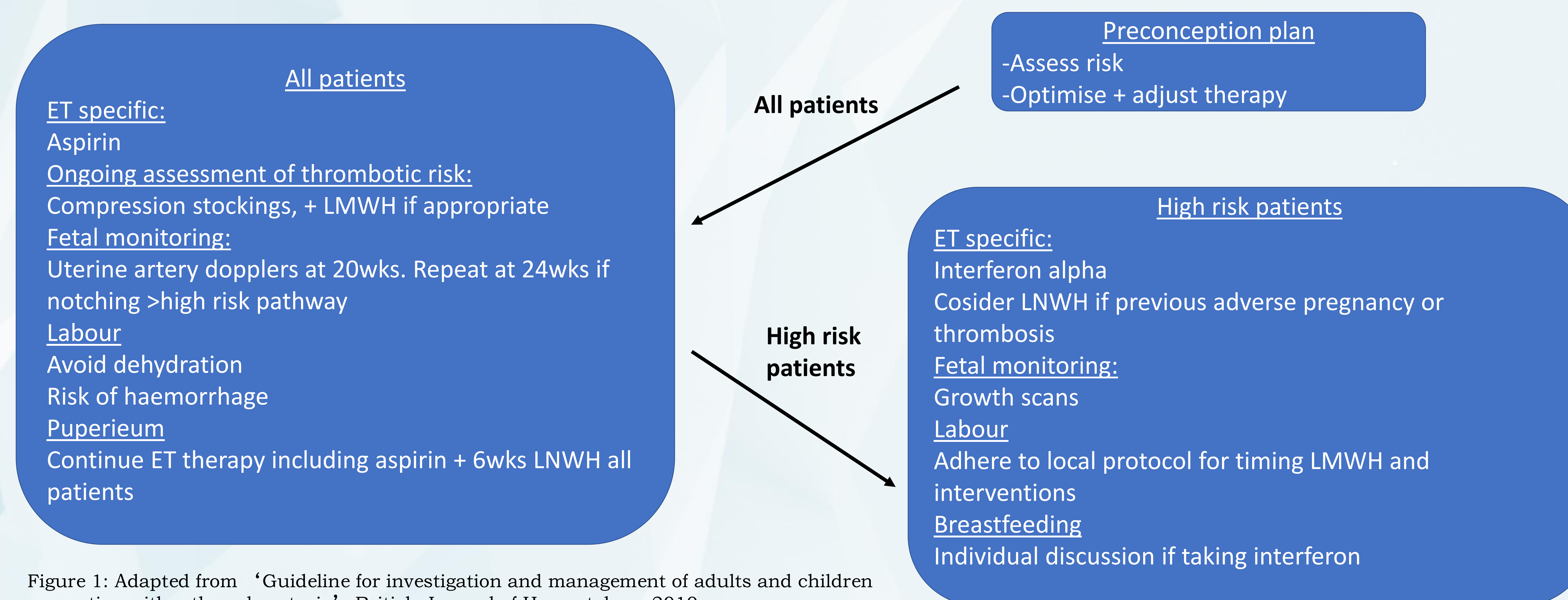


Figure 1: Adapted from ‘Guideline for investigation and management of adults and children presenting with a thrombocytosis’ British Journal of Haematology, 2010

Conclusion: Treatment resistant ET is challenging to manage in pregnancy. BESREMi should be considered as an option in this cohort of patients however further data and research is required to enable an evidence-based guideline for the management of ET in pregnancy.

References

- Harrison, C.N. et al. (2010) ‘Guideline for investigation and management of adults and children presenting with a thrombocytosis’, British Journal of Haematology, 149(3), pp. 352–375. doi:10.1111/j.1365-2141.2010.08122.x.
- Myeloproliferative Disorders: UKOSS (no date) NPEU. Available at: <https://www.npeu.ox.ac.uk/ukoss/completed-surveillance/mpd>
- EMA (2023) Besremi, European Medicines Agency. Available at: <https://www.ema.europa.eu/en/medicines/human/EPAR/besremi>
- BESREMI (no date) BESREMi® (ropeginterferon alfa-2b-njft) - Official HCP Site. Available at: <https://www.besremihcp.com/>
- I Sanchez, G Durgam, C Woodley, N Curto-Garcia, J O’Sullivan, S.E Robinson, S Ali, D McLornan, C Harrison. A case of polycythaemia vera treated with Ropeginterferon-2B during pregnancy. European Haematology Association Library 2021
- Bang S-Y, Lee S-E. A Case Report of Ropeginterferon Alfa-2b for Polycythemia Vera during Pregnancy. *Hematology Reports*. 2023; 15(1):172-179. <https://doi.org/10.3390/hematolrep15010018>