Hypersensitivity reactions to parenteral iron in pregnant women and maternofetal consequences

Émilie Vittaz[1], Bianca Quinchard[1], Sophie Gautier[2], Tessa Pietri[3], Hélène Peyrouzet[4], Thierry Vial[1,5]

(1) Surveillance Division, Agence nationale de sécurité du médicament et des produits de santé (ANSM), Saint-Denis, France. (2) Service de pharmacologie médicale, centre régional de pharmacovigilance Nord-Pas-de-Calais, CHU de Lille, Lille, France. (3) Centre Régional de Pharmacovigilance Marseille Provence Corse, Service de Pharmacologie clinique & Pharmacosurveillance, APHM, Marseille, France. (4) Centre Régional de Pharmacovigilance de Bordeaux et DROM, Service de pharmacologie médicale, CHU de Bordeaux, 33000 Bordeaux, France. (5) Service Hospitalo-Universitaire de Pharmaco-Toxicologie, Hospices Civils de Lyon, Lyon, France.

INTRODUCTION

In France, approximately 25% of pregnant women suffered from anemia. Parenteral iron is recommended if anemia is severe or poorly tolerated*, diagnosed after 24 weeks of amenorrhea, or when oral supplementation is ineffective. However, parenteral iron preparations carried a risk of immediate hypersensitivity reactions (IHRs)** with potentially life-threatening consequences for both the mother and the fetus. Our aim is to describe IHRs to parenteral iron in pregnant women reported to the French pharmacovigilance network.

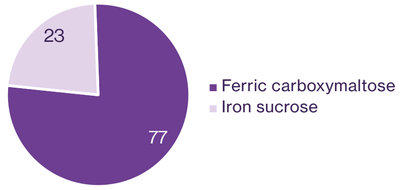
METHODS

Data were extracted from the French pharmacovigilance database up to December 31, 2024. Inclusion criteria were limited to hypersensitivity reaction occurring within 2 hours of injectable iron administration in pregnant women.

RESULTS

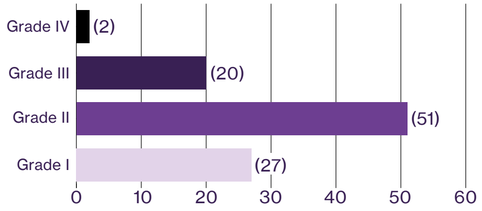
One hundred cases of IHRs were identified. The median gestational age at the time of injection was 34+5 weeks (Q1 = 30, Q3 = 37+3 ; N=72).

Distribution of the type of injectable iron administered (N=100)



Injection dose numbers were available for 52 cases with 41 IHRs occurring after the first dose, 10 after the second dose and in 1 after the third dose. IHRs occurred during the infusion in 71 cases and after the end of the infusion in 29. According to the Ring and Messmer classification, anaphylactic reactions were categorized as grade I, II, III or IV in 27 cases.

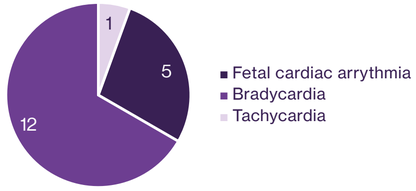
Distribution of anaphylactic reactions according to the Ring and Messmer classification (N=100)



Both grade IV cases consisted of an anaphylactic shock that was further complicated by reversible disseminated intravascular coagulation in the first patient and required emergency cesarean section (CS) at 30+5 weeks of gestation in the other.

Noticeably, this last patient uneventfully received intravenous iron during a previous pregnancy. Information of fetal outcomes was available in 35 cases. No fetal effects were observed in 17 cases. In 18 cases, fetal cardiac anomalies were documented.

Distribution of fetal cardiac anomalies (N=18)



Emergency CS was required in 3 patients due to the poor health condition of the mother and/or fetus.

FINDINGS

This analysis highlights the need to consider the risk of hypersensitivity reactions following exposure to parenteral iron preparations, particularly their potential impact on fetal health.
Consequently, it is essential to administer injectable iron under strict medical conditions with close monitoring of both the mother and the fetus at least for 2 hours after the start of the infusion.

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emilie.vittaz@ansm.sante.fr

Authors have no conflict of interest

* https://www.santepubliquefrance.fr/docs/enquete-nationale-perinatale.-rapport-2021.-les-naissances-le-suivi-a-deux-mois-et-les-etablissements
** https://www.has-sante.fr/jcms/p_3193968/fr/gestion-du-capital-sanguin-en-pre-per-et-post-operatoire-et-en-obstetrique

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