HPRA
An tÚdarás Rialála Táirgí Sláinte
Health Products Regulatory Authority

Beta interferons - Risk of thrombotic microangiopathy and nephrotic syndrome

Interferon beta-1a and interferon beta-1b are indicated for the treatment of relapsing multiple sclerosis* and in patients with a single demyelinating event with an active inflammatory process. Interferon beta-1b products may also be used in patients with secondary progressive multiple sclerosis with active disease evidenced by relapses.

In July 2014, a European review of interferon beta products* and associated reports of thrombotic microangiopathy (TMA) and nephrotic syndrome was concluded. Cases of TMA, including fatal cases, had been reported during treatment of multiple sclerosis with interferon beta. Most TMA cases presented as thrombotic thrombocytopenic purpura or haemolytic uraemic syndrome. Cases of nephrotic syndrome with different underlying nephropathies have also been reported in association with these products. The review could not rule out a causal association between interferon beta products and TMA or nephrotic syndrome.

Advice to Healthcare Professionals

Thrombotic microangiopathy

- TMA may develop several weeks to several years after starting treatment with interferon beta.
- Be vigilant for signs and symptoms of TMA and manage it promptly in line with the advice below.
- Clinical features of TMA include thrombocytopenia, new onset hypertension, fever, impaired renal function and central nervous system symptoms (e.g. confusion and paresis).
- If clinical features of TMA are observed, platelet levels, serum lactate dehydrogenase levels, renal function and red blood cell fragments on a blood film should be performed.
- If TMA is diagnosed, prompt treatment (e.g. plasma exchange should be considered) is required and immediate discontinuation of interferon beta is recommended.

Nephrotic syndrome

- Nephrotic syndrome may develop several weeks to several years after starting treatment with interferon beta.
- Be vigilant for the development of this condition and manage it promptly in line with the advice below.
- Renal function should be monitored periodically and early signs or symptoms of nephrotic syndrome (e.g. oedema, proteinuria and impaired renal function, especially in high risk groups) should be noted.
- If nephrotic syndrome occurs, it should be treated promptly and consideration should be given to stopping treatment with interferon beta.

The product information (Summary of Product Characteristics (SmPC) and package leaflet (PL)) for all interferon beta products has been updated and will be fully harmonised with information on TMA and nephrotic syndrome.

Key messages

- Cases of TMA including fatal cases have been reported during treatment of multiple sclerosis with interferon beta products.
- Most TMA cases presented as thrombotic thrombocytopenic purpura or haemolytic uraemic syndrome.
- Cases of nephrotic syndrome with different underlying nephropathies have also been reported.
- Both TMA and nephrotic syndrome may develop several weeks to several years after starting treatment with interferon beta.
- Be vigilant for the development of these conditions and manage them promptly if they occur.

**The following interferon beta products are authorised for the treatment of multiple sclerosis: Avonex (interferon beta-1a), Rebif (interferon beta-1a), Betaferon (interferon beta-1b), Extavia (interferon beta-1b), Plegridy (peginterferon beta-1a). Further details available at www.hpra.ie.*

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