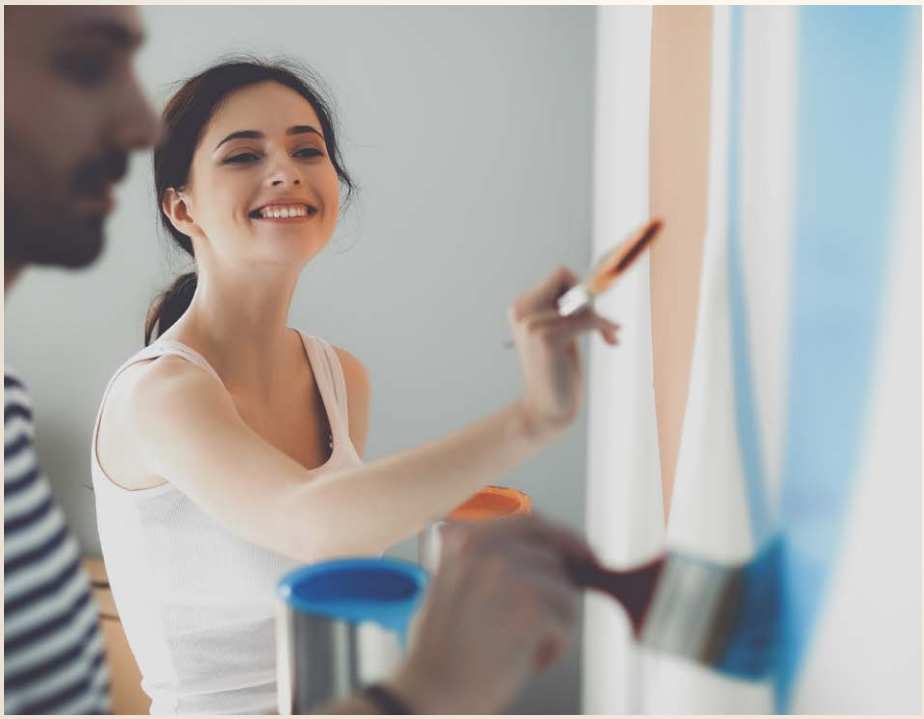
Interview

Betaferon® and Pregnancy

INTERVIEW WITH PROF. DR. JELENA DRULOVIC

MS and pregnancy: Patient encouragement from both health-care provider and family is very important!

Find out more in the interview with
Prof. Dr. Jelena Drulovic inside this issue.



EDITORIAL

The typical multiple sclerosis (MS) patient is a woman of childbearing age. Therefore, not surprisingly, pregnancy is a major concern for many MS patients and they expect proactive counseling from their neurologist before, during and after the pregnancy.

In this series of articles we present the viewpoints of MS experts from around the world on the practical management of pregnancy and pregnancy-related topics for patients with MS. In this issue, Professor Dr. Jelena Drulovic from Serbia, speaks about typical questions MS patients ask when they express their intention to become pregnant and she highlights the importance of patient encouragement from both health-care provider and family.

Patrick Salonis
Bayer U.S. LLC,
Global and US Brand Director, Betaferon®

BETAFERON®
Interferon beta-1b

Interview with Prof. Dr. Jelena Drulovic

Pregnancy and Betaferon®:

Patient encouragement from both health-care provider and family is very important!

Dr. Drulovic, you are heading up a large MS center in Serbia. Roughly for what percentages of your female MS patients are pregnancy / having a child a topic?

About half of the MS patients in our center are women of childbearing age, by this I mean women between the age of 18 and 45. My guess is that pregnancy / wanting to have a child is a topic for about half of them. As said, it's a guess, based on the overall cohort. I do not have exact numbers.

What are typical questions MS patients ask when they express their intentions to become pregnant / start a family? What are your general advices to them? Do you typically encourage your MS patients of trying to become pregnant?

a. And what are the outcomes, do patients generally decide for starting a family?

b. In your experience, what drives the pro-parenthood decision in patient with MS?

Patient questions around MS and pregnancy can largely be split into three categories:

- The effects of a pregnancy on the disease
- How does the disease affect the pregnancy
- The heredity of MS

There is enough data from the literature that there is no fear for MS patients of having a baby; neither pregnancy adversely affects the disease course nor the disease leads to a high-risk pregnancy. In general, we encourage patients of getting pregnant and a majority follow our advice. Only a minority of patients with MS are discouraged. Overall, patient encouragement from health-care provider and family is very important!

In your experience, how does a pregnancy of a patient with mild-to-moderate MS distinguish from a pregnancy without MS?
Does MS have an impact on obstetrical outcomes, delivery or anesthesia choices?

Patients with MS can largely expect a pregnancy similar to the general healthy population. As women without MS, they need to make shared-decision around delivery or anesthesia choices with their obstetrician. We advise our patients to get in contact with the gynecologist rather sooner than later and to seek the respective advices immediately.

What are recommendations to a young colleague, what is the most important point to consider when counselling a patient about MS and pregnancy?

Definitively crucial is that patients are in a stable, inactive phase of their disease when they plan to get pregnant. In periods of high disease activity or unstable disease, the stabilization of the disease should come first. Once the disease is stabilized, we encourage a patient for getting pregnant.

PROF. DR JELENA DRULOVIC

Jelena Drulovic (born Nikolic), is full Professor of Neurology at the Faculty of Medicine University of Belgrade, and Head of the MS center, at the Clinic of Neurology, University Clinical Center of Serbia, in Belgrade, Serbia.

Dr Drulovic graduated from Faculty of Medicine University of Belgrade in 1983. In 1986, she began to work as a resident at the Clinic of Neurology, Clinical Center of Serbia, Belgrade, Serbia. Following residency, she trained in neuropsychiatry at the Faculty of Medicine University of Belgrade, and passed the specialty exam in 1991. Since 1993, Dr Drulovic is involved in teaching neurology of medical students at the Faculty of Medicine University of Belgrade.
From 1999 to 2010, she was Head of the Unit of Neuroimmunology, at the Clinic of Neurology, University Clinical Center of Serbia and from 2010 on Head of the MS Centre, at the Clinic of Neurology. From 2014, she is the president of the Multiple Sclerosis Task force of the Serbian Society of Neurologists. From 2018, she is the president of the Neurological advisory board of the Ministry of Health Republic of Serbia. Her main field of research interest is neuroimmunology and multiple sclerosis. Prof. Drulovic is a member of EAN Subspecialty Scientific Panel Multiple Sclerosis and EAN Subspecialty Scientific Panel on Neuroimmunology. Dr Drulovic has 132 publications in JCR list, out of more than 300 publications in international and national scientific journals. From 2009, she serves as Associate Editor of BMC Neurology.

Betaferon®
(Refer to full SmPC before prescribing.)

Composition: *Active ingredient:* Recombinant interferon beta-1b 250 microgram (8.0 million IU) per ml when reconstituted. Betaferon contains 300 microgram (9.6 million IU) of recombinant interferon beta-1b per vial. *Excipients:* Human albumin, Mannitol. **Indications:** Betaferon is indicated for the treatment of patients with a single demyelinating event with an active inflammatory process, if it is severe enough to warrant treatment with intravenous corticosteroids, if alternative diagnoses have been excluded, and if they are determined to be at high risk of developing clinically definite MS, patients with relapsing-remitting MS and two or more relapses within the last two years and patients with secondary progressive MS with active disease, evidenced by relapses. **Contraindications:** Patients with a history of hypersensitivity to natural or recombinant interferon beta, human albumin or any of the excipients. Patients with current severe depression and/or suicidal ideation. Patients with decompensated liver disease. **Special warnings / Precautions:** The administration of cytokines to patients with a pre-existing monoclonal gammopathy has been associated with the development of systemic capillary leak syndrome with shock-like symptoms and fatal outcome. • In rare cases, pancreatitis was observed with Betaferon use, often associated with hypertriglyceridaemia. • Betaferon should be administered with caution to patients with previous or current depressive disorders, in particular to those with antecedents of suicidal ideation. Patients should be advised to immediately report symptoms of depression and/or suicidal ideation to their prescribing physician. Patients exhibiting depression should be monitored closely during therapy with Betaferon and treated appropriately. Cessation of therapy with Betaferon should be considered. Betaferon should be administered with caution to patients with a history of seizures, particularly if their epilepsy is not adequately controlled with anti-epileptics. This product contains human albumin and hence carries the risk for transmission of viral diseases. A risk for transmission of Creutzfeld-Jacob disease cannot be excluded. • Thyroid function tests are recommended regularly in patients with a history of thyroid dysfunction or as clinically indicated. Complete blood and differential white blood cell counts, platelet counts, and blood chemistries, including liver function tests (e.g. AST (SGOT), ALT (SGPT) and γ-GT), are recommended prior to initiation and at regular intervals during Betaferon therapy. Patients with anaemia, thrombocytopenia and/ or leukopenia may require more intensive monitoring. • Severe hepatic injury, including cases of hepatic failure, has been reported rarely in patients taking Betaferon. The most serious events often occurred in patients exposed to other drugs or substances associated with hepatotoxicity or with comorbidity. Patients should be monitored for signs of hepatic injury. Withdrawal of Betaferon should be considered if serum transaminases levels increase significantly or are associated with clinical symptoms. • Caution should be used and close monitoring considered with severe renal failure. • Cases of nephrotic syndrome with different underlying nephropathies including collapsing focal segmental glomerulosclerosis, minimal change disease, membranoproliferative glomerulonephritis and membranous glomerulopathy have been reported, at various time points, during treatment with interferon-beta products and may occur after several years of treatment. Periodic monitoring of early symptoms and prompt treatment is required; and discontinuation of treatment with Betaferon should be considered, especially in patients at higher risk of renal disease. • Caution is required in patients with pre-existing cardiac disorders. Patients with pre-existing significant cardiac disease should be monitored for worsening of their cardiac condition, particularly during initiation of treatment with Betaferon. While Betaferon does not have known direct-acting cardiotoxicity, flu-like symptoms may prove stressful to pre-existing heart disease. Rare cases of cardiomyopathy have been reported: If this occurs and a relationship to Betaferon is suspected, treatment should be discontinued. • Cases of thrombotic microangiopathy (TMA), manifested as thrombotic thrombocytopenic purpura or haemolytic uraemic syndrome have been reported with interferon-beta products. Additionally, cases of haemolytic anaemia (HA) not associated with TMA, including immune HA, have been reported. Life-threatening and fatal cases have been reported. Cases of TMA and/or HA have been reported at various time points during treatment and may occur several weeks to several years after starting treatment with interferon beta. If TMA and/or HA is diagnosed and a relationship to Betaferon is suspected, prompt treatment is required and immediate discontinuation of Betaferon is recommended.
• Serious hypersensitivity reactions may occur. If reactions are severe, Betaferon should be discontinued and appropriate medical intervention instituted. • Injection site necrosis has been reported in patients using Betaferon. It can be extensive and may result in scar formation. If the patient experiences any break in the skin, the patient should be advised to consult with his/her physician before continuing Betaferon injections. If the patient has multiple lesions Betaferon should be discontinued until healing. **Undesirable effects:** At the beginning of treatment adverse reactions are common but in general they subside with further treatment. The most frequently observed adverse reactions are a flu-like symptom complex and injection site reactions. Dose titration is recommended at the start of treatment in order to increase tolerability to Betaferon. Flu-like symptoms may be reduced by administration of non-steroidal anti-inflammatory drugs. The incidence of injection site reactions may be reduced by the use of an autoinjector. **Undesirable effects which were significantly associated with Betaferon treatment in clinical trials:** *Very common:* lymphocyte count decreased, absolute neutrophil count decreased, white blood cell count decreased, headache, abdominal pain, alanine aminotransferase increased, rash, hypertonia, myalgia, injection site reaction, flu-like symptoms, fever, asthenia, chills; *Common:* abnormal vision, palpitation, hypertension, dyspnoea, vomiting, aspartate aminotransferase increased, menstrual disorder, injection site necrosis, chest pain, sweating, malaise. **Undesirable effects identified during post-marketing surveillance:** *Very common:* arthralgia; *Common:* anaemia, hypothyroidism, blood bilirubin increased, weight increased, weight decreased, confusional state, tachycardia, urticaria, pruritus, alopecia, menorrhagia; *Uncommon:* thrombocytopenia, blood triglycerides increased, suicide attempt, emotional lability, convulsion, hepatitis, skin discolouration, nephrotic syndrome, glomerulosclerosis; *Rare:* thrombotic microangiopathy including thrombotic thrombocytopenic purpura/ haemolytic uraemic syndrome, anaphylactic reactions, hyperthyroidism, thyroid disorders, anorexia, cardiomyopathy, bronchospasm, pancreatitis, hepatic injury, hepatic failure. *Frequency not known:* haemolytic anaemia, capillary leak syndrome in pre-existing monoclonal gammopathy, drug-induced lupus erythematosus, pulmonary arterial hypertension.

Please refer to the Summary of Product Characteristics for further information.
On prescription only.
Marketing Authorisation Holder: Bayer AG, 51368 Leverkusen, Germany.
Date of issue of Marketing Authorisation valid throughout the EU: 30.11.1995.
Date of last Renewal: 31.1.2006. **Date of last SPC revision:** 29.10.2020

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