Risk of infections and malignancies after treatment with anti-CD20 monoclonal antibodies: Ocrelizumab and rituximab in rheumatoid arthritis and multiple sclerosis

L Kappos, D Leppert, J Timbergen, M Gerber, SL Hauser

University Hospital Basel (Basel, Switzerland); 7 Hoffmann-La Roche Ltd (Basel, Switzerland); 1 University of California San Francisco (San Francisco, USA)

ABSTRACT

Background

With the approval of two anti-CD20 monoclonal antibodies (mAbs), rituximab (RTX) and ocrelizumab (OCR), there has been increased attention paid to the safety profile of biologic treatment. Comparative data on the incidence of infections and malignancies after treatment with RTX and OCR is limited. The aim of this study was to evaluate the clinical safety data (and post-approval data for RTX) of RTX and OCR in patients with rheumatoid arthritis (RA) and multiple sclerosis (MS).

Methods

The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.

Results

72

Infections

• The incidence of infections and SIs is similar across both low and high doses of RTX and OCR. The incidence of infections was lower in the OCR studies compared to the RTX studies.

• Some of the data presented in this abstract and poster have been updated from those presented in the original abstract.

• There was no increased risk of malignancies with RTX in patients with RA (all-exposure RTX, 0.06 events/100 patient-treated years (PTY); RTX: 0.99/100 PTY [95% CI: 0.79–1.23] versus 1.05/100 PTY in adult patients with RA

Malignancies

• There was an increased risk of malignancies with RTX in patients with MS (all-exposure RTX, 0.03 events/100 PTY; RTX: 3.94/100 PTY [95% CI: 3.60–4.31] versus placebo: 3.79/100 PTY)

• Overall, the incidence of malignancies was lower in the OCR studies compared to the RTX studies.

Conclusions

• The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.

INTRODUCTION

Malignancies

• RTX (a chimeric mAb) is an anti-CD20 antibody that selectively binds to the CD20 antigen found on B lymphocytes, leading to cell death via apoptosis or antibody-dependent cellular cytotoxicity, and other mechanisms.

• Some of the data presented in this abstract and poster have been updated from those presented in the original abstract.

• There was no increased risk of malignancies with RTX in patients with RA (all-exposure RTX, 0.06 events/100 patient-treated years (PTY); RTX: 0.99/100 PTY [95% CI: 0.79–1.23] versus 1.05/100 PTY in adult patients with RA

Malignancies

• There was an increased risk of malignancies with RTX in patients with MS (all-exposure RTX, 0.03 events/100 PTY; RTX: 3.94/100 PTY [95% CI: 3.60–4.31] versus placebo: 3.79/100 PTY)

• Overall, the incidence of malignancies was lower in the OCR studies compared to the RTX studies.

Conclusions

• The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.

INTRODUCTION

Malignancies

• RTX (a chimeric mAb) is an anti-CD20 antibody that selectively binds to the CD20 antigen found on B lymphocytes, leading to cell death via apoptosis or antibody-dependent cellular cytotoxicity, and other mechanisms.

• Some of the data presented in this abstract and poster have been updated from those presented in the original abstract.

• There was no increased risk of malignancies with RTX in patients with RA (all-exposure RTX, 0.06 events/100 patient-treated years (PTY); RTX: 0.99/100 PTY [95% CI: 0.79–1.23] versus 1.05/100 PTY in adult patients with RA

Malignancies

• There was an increased risk of malignancies with RTX in patients with MS (all-exposure RTX, 0.03 events/100 PTY; RTX: 3.94/100 PTY [95% CI: 3.60–4.31] versus placebo: 3.79/100 PTY)

• Overall, the incidence of malignancies was lower in the OCR studies compared to the RTX studies.

Conclusions

• The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.

INTRODUCTION

Malignancies

• RTX (a chimeric mAb) is an anti-CD20 antibody that selectively binds to the CD20 antigen found on B lymphocytes, leading to cell death via apoptosis or antibody-dependent cellular cytotoxicity, and other mechanisms.

• Some of the data presented in this abstract and poster have been updated from those presented in the original abstract.

• There was no increased risk of malignancies with RTX in patients with RA (all-exposure RTX, 0.06 events/100 patient-treated years (PTY); RTX: 0.99/100 PTY [95% CI: 0.79–1.23] versus 1.05/100 PTY in adult patients with RA

Malignancies

• There was an increased risk of malignancies with RTX in patients with MS (all-exposure RTX, 0.03 events/100 PTY; RTX: 3.94/100 PTY [95% CI: 3.60–4.31] versus placebo: 3.79/100 PTY)

• Overall, the incidence of malignancies was lower in the OCR studies compared to the RTX studies.

Conclusions

• The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.

INTRODUCTION

Malignancies

• RTX (a chimeric mAb) is an anti-CD20 antibody that selectively binds to the CD20 antigen found on B lymphocytes, leading to cell death via apoptosis or antibody-dependent cellular cytotoxicity, and other mechanisms.

• Some of the data presented in this abstract and poster have been updated from those presented in the original abstract.

• There was no increased risk of malignancies with RTX in patients with RA (all-exposure RTX, 0.06 events/100 patient-treated years (PTY); RTX: 0.99/100 PTY [95% CI: 0.79–1.23] versus 1.05/100 PTY in adult patients with RA

Malignancies

• There was an increased risk of malignancies with RTX in patients with MS (all-exposure RTX, 0.03 events/100 PTY; RTX: 3.94/100 PTY [95% CI: 3.60–4.31] versus placebo: 3.79/100 PTY)

• Overall, the incidence of malignancies was lower in the OCR studies compared to the RTX studies.

Conclusions

• The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.

INTRODUCTION

Malignancies

• RTX (a chimeric mAb) is an anti-CD20 antibody that selectively binds to the CD20 antigen found on B lymphocytes, leading to cell death via apoptosis or antibody-dependent cellular cytotoxicity, and other mechanisms.

• Some of the data presented in this abstract and poster have been updated from those presented in the original abstract.

• There was no increased risk of malignancies with RTX in patients with RA (all-exposure RTX, 0.06 events/100 patient-treated years (PTY); RTX: 0.99/100 PTY [95% CI: 0.79–1.23] versus 1.05/100 PTY in adult patients with RA

Malignancies

• There was an increased risk of malignancies with RTX in patients with MS (all-exposure RTX, 0.03 events/100 PTY; RTX: 3.94/100 PTY [95% CI: 3.60–4.31] versus placebo: 3.79/100 PTY)

• Overall, the incidence of malignancies was lower in the OCR studies compared to the RTX studies.

Conclusions

• The data from these studies were reviewed for incidence of serious infections (SIs), serious infections with an opportunistic etiology (SIEs), serious opportunistic infections (OIs), and serious adverse events (SAEs) in patients with RA or MS receiving RTX or OCR. For each event, the definition, timeline, rate, and rate ratio compared with placebo (RTX or OCR) were calculated. The data were reviewed in the context of a prior meta-analysis where studies were pooled to provide a more complete view of the incidence of infections following treatment with RTX and OCR.