**Materials and Methods**

All consecutive adult patients with moderate and severe plaque-type psoriasis who were referred to the Department of Dermatology at the University of Brescia between January 2012 and December 2016 were enrolled in the study, and medical records were stored in an electronic database. This department is the only tertiary referral centre entitled to prescribe biologics and the only one providing phototherapy in an area of approximately 1.3 million residents in northern Italy. Patients affected by psoriatic arthritis were excluded from this study.

NB-UVB phototherapy was added to the list of conventional systemic treatments that, according to the EMA criteria that were valid until 2017, must be evaluated before the patient was deemed eligible for a biologic. Therefore, biologics were prescribed only if the use of all first-line treatments and phototherapy had been ruled out. However, the choice of a specific therapy among first-line treatments or within the group of biologic drugs was not driven by a fixed preference order. Fumarates were not included because they are not available in Italy.

Table 1 summarizes how we interpreted and applied the EMA eligibility criteria for biologics.

According to EDF/EADV guidelines, the definition of moderate psoriasis was set at PASI10 or above [11]. All physicians attended a training course for standardized PASI calculation [12]. During the study, two physicians (A.Z., M.A.) assessed the individual PASI of patients independently, and, in case of disagreement, both investigators reviewed the scores together with a third expert physician (P.C.-P.).

At baseline and at regular intervals, patients underwent physical examination, laboratory tests and instrumental controls according to the specific recommendations for each treatment option [7–10, 11, 13–15].

A treatment was not considered for a patient, if it had been ineffective or caused severe adverse events in previous treatment cycles.

The presence of an absolute contraindication was always considered an exclusion criterion [7–10, 11, 13–15].

If relative contraindications [7–10, 11, 13–15] were present and could not be removed, they were managed with adequate interventions and a careful follow-up [7–10, 11, 13–15].

Interactions with drugs taken for comorbidities were evaluated case by case [7–10, 11, 13–15]. If the risk of toxicity or harmful effects was considered high and the concomitant drug could not be withdrawn or dose adjusted within safety limits, the antipsoriatic therapy under consideration was not used [7–10, 11, 13–15].

In addition to EMA regulations, a patient’s reasonable refusal of a given treatment (for example due to lack of reasonable access to phototherapy) was always taken into account.

Adverse events were rated according to the Adverse Event Severity Grading Scale based on National Cancer Institute Common Terminology Criteria for Adverse Events v4.0 [16] (Table 2). Treatment was interrupted if adverse events of grades 3–5 developed or if the grade 1 and 2 adverse events were not manageable with minor and temporary medical interventions or a dose reduction within the therapeutic range [7–10, 11, 13–15].

Conventional drugs and biologics were always prescribed at the highest recommended dose [7–10, 11, 13–15]. NB-UVB and PUVA were delivered according to well-established protocols [17].

If no adverse events developed, all treatments were maintained for at least 3 months before the clinical outcome was evaluated.

With less improvement than PASI50 after 3 months of therapy or if an improvement >PASI50 but <PASI75 without further amelioration in the following month was registered, the treatment was discontinued, and the patient was switched to another treatment [11, 17]. Treatment was also discontinued after reaching >PASI90 or >PASI75 if further improvement was not achieved despite an additional month of therapy.

If a patient had an early (within 3 months) relapse after discontinuation, the same treatment was resumed at the same dose. After attaining disease control, a maintenance treatment with a cautious tapering of the dose was delivered [11]. However, with NB-UVB phototherapy and cyclosporine, therapy was not resumed because of the risk of cumulative toxicity with maintenance treatment [11].