CERTARA

Quantify Multiple Sclerosis Clinical Outcomes Database

Summary Information

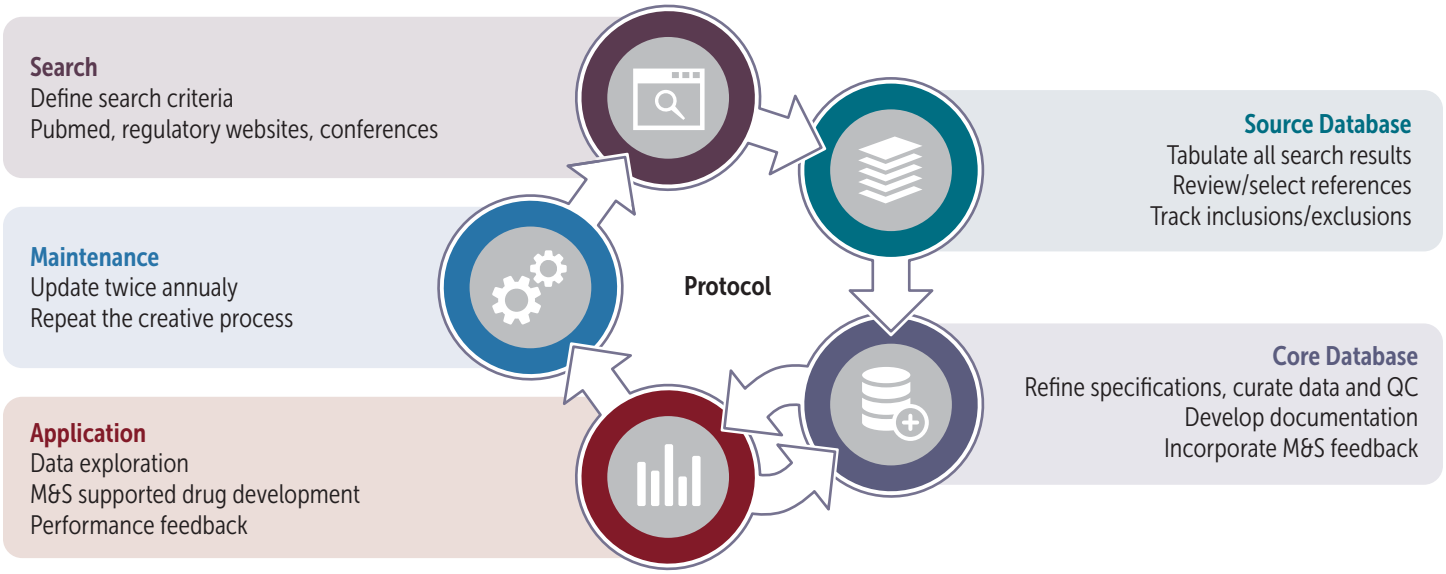
The current version of the database includes clinical safety and efficacy information on disease modifying therapies that are on the market or late stage clinical development for relapsing, remitting, and secondary progressive multiple sclerosis.

Table 1. Summary information

Parameter	Description
format	Excel or KEEP format
indications	rrms, spms, ppms
references	152
trials	98
trial.arms	258
patients	45,841
data.rows	13,569
compounds	abt-874, alemtuzumab, antibody to ifn-gamma, antibody to tnf-alpha, atacicept , atorvastatin, azathioprine, cladribine, daclizumab, dimethylfumarate, dirucotide, fingolimod, firategrast, glatiramer, glatiramer acetate, interferon beta, interferon beta 1a, interferon beta 1a biosimilar, interferon beta 1b, laquinimod, masitinib, methotrexate, methyl prednisolone, minocycline, mitoxantrone, natalizumab, ocrelizumab, ofatumumab, placebo, ponesimod, rituximab, simvastatin, siponimod, teriflunomide, ustekinumab
key efficacy endpoints	antibody titer, arr, brain volume, cumulative combined brain lesions, cumulative new brain lesions, edss, hr arr, hr progression, msfc, msfc-25 ft timed walk, msfc-9 hole peg test, msfc-pasat 3, progression, progression free, relapse, relapse = 0, relapse = 1, relapse = 2, relapse = 3, relapse >= 3, relapse cumulative, relapse free, relapse rate, t1, t1 volume, t1gd, t1gd = 0, t1gd volume, t2, t2 = 0, t2 volume, time to relapse
key safety endpoints	ae any, ae serious, bronchitis, cancer any, dropout ae, dropout ae , dropout le, dropout total, fever, flu like syndrome, herpes virus infection, infection any, infection serious, infection uri, infection uti, influenza, leucocytopenia, lymphocyte count, lymphocytopenia, neutropenia, pharyngitis, pneumonia, sinusitis, thrombocytopenia

Organization and Structure

This product consists of two databases, the MS source database and the MS clinical outcomes database. The source database is a database that maintains the sources of information in the literature. The clinical outcomes database contains the information on trial, treatment and patients characteristics, and efficacy results of the trials identified for inclusion in the database.



Overview of the Multiple Sclerosis Source Database

The primary data sources were controlled clinical trials published in the medical literature or available through the FIA from the FDA. A secondary source of information was published abstracts or presentations of clinical trial data from conferences and corporate websites.

589 references were identified and documented in the source database, of which a total of 152 references were selected for inclusion in the database after careful review of the abstracts. The detailed reference information as well as reasons for exclusion is recorded to facilitate potential future expansion of the database. The 152 references selected for inclusion in the database provide information on 98 unique trials and 258 unique treatment arms.

Overview of the Multiple Sclerosis Clinical Outcomes Database

The clinical outcomes database contains information from 98 trials, representing 258 unique treatment arms and 45,841 patients. There are a total of 13,569 rows in the database. Each row contains the information for an endpoint in one arm of a trial at a specific point in time. The table below provides an overview of the available data for randomized treatments.

Table 2. Number of trials, treatment arms and patients for each drug class

randomized.drug.class	trials	arms	patients
antimetabolite	5	7	1156
corticosteroid	3	3	318
corticosteroid+folate analog metabolic inhibitor	1	1	78
corticosteroid+placebo	1	1	74
folate analog metabolic inhibitor	1	1	83
hmg-coa reductase inhibitors	1	1	70
humanized monoclonal antibody	15	25	4644
immunomodulator	26	40	9324
immunomodulator+type ii topoisomerase inhibitor	1	1	21
immunosuppressant	2	4	346
immunosuppressant +corticosteroid	1	1	63
immunosuppressant +placebo	1	1	58
interferon	34	53	10775
interferon+immunomodulator	1	1	499
interferon+placebo	1	1	250
monoclonal anti-il-12/23 antibody	1	2	146
nrf2 activator	3	7	1726
placebo	75	75	11853
placebo+immunomodulator	1	1	259
placebo+placebo	1	1	60
s1pr modulator	8	21	3841
statin	1	1	39
synthetic peptide	2	2	323
tetracycline antibiotic	1	1	21
tnf	1	1	15
type ii topoisomerase inhibitor	4	5	190
tyrosine kinase inhibitor	1	1	9
TOTAL	**98**	**258**	**45823**

Table 3. Summary of studies by endpoint category

endpoint.category	trials	arms	patients
ae	83	220	43534
antibody titer	10	25	3042
disability	77	194	40128
dropout	79	215	41025
hr	30	77	26302
mri	81	216	39394
relapse	82	215	42225
TOTAL	98	258	45823

Outcome Fields

Efficacy Endpoints

- Relapse related endpoints
  - Annualized relapse rate
  - Relapse rates other than ARR
  - Time to first relapse
  - Percent patients relapse free
  - Number of patients with relapse/cumulative number of relapses
  - Percent patients with N relapses
- Relapse/Progression related endpoints
  - Change in EDSS score
  - Time to progression
  - Sustained progression in disability
  - Sustained reduction in disability
  - Multiple sclerosis function composite (MSFC)
  - Multiple sclerosis impact scale (MSIS)
- MRI related endpoints
  - New Gd enhanced T1 lesion
  - New and newly enlarged T2 lesions
  - Percent patients with no Gd enhanced T1 lesions
  - Percent patients with no new or enlarged T2 lesions
  - Brain volume
  - T1GD lesion volume
  - T2 lesion volume cumulative
  - Combined brain lesions/cumulative new brain lesions
  - Cumulative new or enlarged brain lesions

Safety/Tolerability Endpoints

- Dropout
  - Dropout adverse event
  - Dropout lack of efficacy
  - Dropout other
  - Dropout total
- AE
  - All infections
  - Serious infections
  - Upper respiratory infections
  - Urinary tract Infections
  - Skin infections
  - Nasopharyngitis
  - Pharyngitis
  - Cancer
  - Skin cancer
  - Other cancer
  - Neutropenia
  - Thromocytopenia
  - Bradycardia
  - Lymphocytopenia
  - Leucocytopenia

About Certara

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