This case study shows the user how to browse the contents of Martindale: The Complete Drug Reference, how reference citations are displayed and how to use links to internal and external documents ("hyperlinks").

Scenario: A pharmacist undertaking Continuing Professional Development (CPD) relating to epilepsy wants to read up on antiepileptics in Martindale.

1. Open MedicinesComplete and click on the publication Martindale: The Complete Drug Reference. Click on “Contents”.

Martindale: The Complete Drug Reference

Sections
- Contents
- What’s new?
- Demonstration (requires PowerPoint viewer)
- Quick guide (requires Adobe® Reader®)

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Martindale: The complete drug reference has been a trusted source for medicines information for over 120 years. With its worldwide coverage and unbiased, reliable and evaluated information on drugs and medicines, Martindale forms the backbone of MedicinesComplete.

- Encyclopaedic facts about drugs and medicines
  - Over 6,000 drug monographs including more than 200 herbal medicines
  - 124,000 preparations
  - 32,000 references
  - 12,000 manufacturers
- Synopses of treatments for more than 660 diseases
- Covers not only drugs and medicines used throughout the world but also herbal and complementary medicines, veterinary drugs, contrast media, diagnostic agents, radiopharmaceuticals, pharmaceutical
- Updated regularly for quality assurance and accuracy.
2. Click on the sub-section “Drugs and Ancillary Substances”.
3. This reveals the sub-sections of "Drugs and Ancillary Substances". Then click on "Antiepileptics".
4. Continue browsing by clicking on "Drug Monographs".

Antiepileptics

Sub-sections
- Introduction
- Drug Monographs

(last modified: 05-Sep-2005)
5. This reveals a list of drugs, which are included in the sub-section for antiepileptics.
6. By clicking on a drug e.g. "Carbamazepine", this takes you to the monograph entry in Martindale for carbamazepine.

**Carbamazepine**

Sub-sections

- Drug Nomenclature
- Drug Definition and Description
- Adverse Effects
- Treatment of Adverse Effects
- Precautions
- Interactions
- Pharmacokinetics
- Uses and Administration
- Preparations

**Drug Nomenclature**

*Synonyms*: Carbamazepina; Carbamazepinum; G-32883

*BNF*: Carbamazepine

*USAN*: Carbamazepine
7. Reference citations can be seen by positioning the mouse over a citation number leading to the reference appearing in a "pop-up" box.

Hypersensitivity.

An antiepileptic hypersensitivity syndrome, comprising fever, rash, and lymphadenopathy and less commonly hepatosplenomegaly and eosinophilia, has been associated with some antiepileptic drugs including carbamazepine. Although a literature search was only able to find 20 published cases to 1986, 22 cases had been reported to the Australian Adverse Drug Reactions Advisory Committee between 1975 and 1990. Some have estimated the incidence at 1 in 1000 to 1 in 10 000 new exposures to aromatic anticonvulsants, but the true incidence is uncertain due to variations in presentation and reporting. Most reactions occurred after the start of carbamazepine administration, although symptoms may occur anywhere between one day and one week after exposure. In previously sensitised individuals the reactions may occur within 1 day of starting antiepileptics, phenobarbital, and phenytoin is appropriate for patients who develop the syndrome, and their close relatives, should be warned of the risk associated with use of these antiepileptics. Carbamazepine antibodies were detected in an 8-year-old child who developed symptoms of serum sickness including fever, skin rash, oedema, and lymphadenopathy during treatment with carbamazepine. Hypersensitivity to carbamazepine with multisystem effects clinically resembling a mononucleosis syndrome was reported in a 15-year-old boy 2 weeks after starting monotherapy with carbamazepine. All symptoms resolved after discontinuation of carbamazepine and treatment with prednisone.

A hypersensitivity reaction producing fatal eosinophilic myocarditis has been reported in a 13-year-old patient; initial symptoms mimicked scarlet fever.

Generalised erythoderma with renal, hepatic, and bone-marrow failure (characterised by hypercellularity and dyserythropoiesis) has been reported in an 81-year-old man 50 days after starting carbamazepine therapy. Symptoms recurred following an inadvertent rechallenge. The presence of underlying lymphoproliferative disease may have potentiated the severe drug-induced reaction.
8. Alternatively, by clicking on the reference citation you will be hyperlinked to the relevant reference list.

Sudden unexplained death in epilepsy.

Sudden unexplained death in epilepsy (SUDEP) is a common cause of seizure-related mortality in patients with chronic epilepsy. Risk factors may include early onset of epilepsy, frequent generalised tonic-clonic seizures, intractability, and polytherapy. Carbamazepine use has also been implicated but the evidence is insufficient to recommend one antiepileptic regimen over another. Although the FDA in the USA had required data about the specific risk of SUDEP to be included in the prescribing information for the newer antiepileptic drugs gabapentin, lamotrigine, tiagabine, topiramate, and zonisamide, some commentators consider that none of these antiepileptics have shown an associated change in the risk of SUDEP. It was mooted that the incidence of SUDEP was related to the disease rather than a specific drug effect.

9. Active links (sometimes referred to as "hyperlinks") are indicated by underlined text or the \([\text{include symbol}]\) link symbol. By clicking on the underlined text or link symbol, the linked document will be displayed.

**Systemic lupus erythematosus.**

A review\(^1\) of 80 cases of systemic lupus erythematosus-like syndromes associated with carbamazepine that had been reported to the manufacturer suggested that the frequency of reports (less than 0.001%) was below that for idiopathic lupus. The symptoms due to carbamazepine usually resolved on discontinuation of treatment.


**Treatment of Adverse Effects**

In the treatment of carbamazepine overdose repeated doses of activated charcoal may be given by mouth to adults and children who have ingested more than 20 mg/kg; the aim is not only to prevent absorption but also to aid elimination. Gastric lavage may be considered if undertaken within 1 hour of ingestion. Supportive and symptomatic therapy alone may then suffice, with particular attention to correcting hypoxia and hypotension; haemoperfusion has been suggested for severe poisoning (see Overdosage, \(\text{\&}\)).

**Hypersensitivity reactions.**

For reference to successful desensitisation in patients sensitive to carbamazepine, see Hypersensitivity under Adverse Effects, \(\text{\&}\).

**Overdosage.**

Carbamazepine poisoning and its management has been reviewed.\(^4\) Management is primarily supportive, with