Drug-induced peripheral neuropathy

A peripheral neuropathy is a disorder of the peripheral nerves that can cause sensory and motor symptoms, which in severe cases can even result in paralysis. Peripheral neuropathies are often caused by disorders such as diabetes mellitus or multiple myeloma, or by infections (e.g. herpes zoster or HIV), but can also result from metabolic causes (such as vitamin B₆ deficiency). Peripheral neuropathy as a side-effect has been linked to many different drugs, including a number of antibiotics, antidepressants or vaccines. Most of the evidence for this, including evidence of a possible dose-effect relationship or reversibility, derive from the lower-level categories of research evidence, such as case series or reports to adverse events reporting centres. It is often unknown what underlying mechanism can explain the side-effect of such drugs, and causal relationships have not been proven. In some cases, the neuropathy may be linked to both the disorder and the therapy; this is the case, for instance, with the treatment of HIV infections with antiretroviral agents, or with the treatment of hypercholesterolaemia with statins in patients with diabetes mellitus. Insofar as the results of randomised trials are available, these were often not primarily designed to test differences in side-effects. All of these uncertainties are hampering the development of practical recommendations.

There are a number of oncolytics, such as the platinum compounds and taxans, for which evidence that they can cause neuropathies is available from meta-analyses of randomised trials, i.e. the highest level of scientific evidence. Even for these agents, however, it is unclear whether this involves paraneoplastic phenomena and tumour invasion into the nerves, which may have contributed to the neuropathy.

When patients present with peripheral neuropathy, the possibility of it being caused by a drug should be considered. If it appears plausible that this is indeed a side-effect, the doctor may consider lowering the dosage or discontinuing the drug. Doctors and pharmacists should report this side-effect to an adverse events reporting centre.

References*

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*The literature refers to the Dutch text