Benefit of PET and PET/CT in ovarian cancer is not proven

August 8 2012

Due to the lack of studies, there is currently no proof that patients with ovarian cancer can benefit from positron emission tomography (PET) alone or in combination with computed tomography (CT). As regards diagnostic accuracy, in certain cases, recurrences can be detected earlier and more accurately with PET or PET/CT than with conventional imaging techniques. This is the conclusion of the final report by the German Institute for Quality and Efficiency in Health Care (IQWiG) in Cologne that was published on 23 May 2012.

Ovarian cancer is the fifth most common malignant tumour in women. Every year 15.9 women in every 100,000 are diagnosed with the disease in Germany and it claims the lives of 8 in 100,000 women per year. Since the ovaries lie deep in the abdomen and an ovarian tumour normally causes no symptoms for a long time, it is often only discovered at a late stage.

Many experts hope that an investigation using PET or PET/CT alone or in combination with other methods would be better able to distinguish between benign and malignant tumours when ovarian cancer is suspected. It could also help classify cancerous tumours into the correct stage, make it easier to assess whether they respond to treatment and to show earlier and with greater certainty whether a recurrence or secondary tumour (metastasis) has occurred. This information should then enable patients to be given better treatment recommendations.

IQWiG therefore searched the international literature for studies

investigating the effects of diagnosis using PET or PET/CT on health aspects of direct relevance to patients. For example, the results of this research - and an appropriately tailored treatment - could contribute to patients having better chances of survival, spare them unnecessary operations or other diagnostic procedures, or improve their quality of life. However, the search for such studies was unsuccessful, so the question as to the patient-relevant benefit of PET or PET/CT had to remain unanswered.

In addition, IQWiG searched for studies in which the diagnostic accuracy and prognostic power of PET or PET/CT were compared with other diagnostic methods. The basic question is how often a PET investigation gives a correct result. On the one hand, it should overlook true, cancerous tumours as rarely as possible, but on the other, it should not awake any false suspicions.

The results of a total of 40 individual studies on this topic were evaluated. However, these studies permit a robust conclusion only in respect of the detection (or exclusion) of a recurrence, where PET or PET/CT appears to be more reliable than other methods. Nevertheless, it remains unclear whether this only applies to patients in whom symptoms (e.g. pain) have already occurred, or also to those in whom routine screening has shown an abnormal blood test result. This is because only very few studies give precise details on this point.

Since even the above patients have not been investigated to determine whether the higher test accuracy of PET or PET/CT has positive effects on mortality, the burden of disease or the quality of life, IQWiG assumes that a patient-relevant benefit of PET or PET/CT is not proven. For instance, it is particularly questionable whether a recurrence detected by PET or PET/CT can actually be better treated - and the patient thereby has a noticeable advantage.

It is therefore essential that doctors fully inform their patients not only of the possible benefits in the form of an earlier diagnosis, but also of the possible harms. The latter can arise from an earlier start to second-line treatment associated with considerable side effects, but not with a prolongation of survival. Hence studies are urgently needed to investigate the patient-relevant benefit of PET or PET/CT in the diagnosis of ovarian cancers in direct comparison with conventional diagnostic techniques.

Provided by Institute for Quality and Efficiency in Health Care