



FROM VISION TO DECISION

## SEMINAR FRIDAY 09.12.11

**PLACE:** Aud. 4, BBB

**TIME :** 12:00-13:00

**TITLE:**

1. Imaging and New Targets for Personalised Medicine in Endometrial Cancer



**SPEAKERS:**

1. *Helga B. Salvesen, Department of Gynaecology, Haukeland University Hospital*
2. *Ingfrid S. Haldorsen and Jenny A. Husby, Department of Radiology, Haukeland University Hospital*

**ABSTRACT:**

***Helga B. Salvesen***

With lifetime risk among women of 2-3%, endometrial cancer is the most common pelvic gynaecologic malignancy in industrialized countries. Approximately 75% of cases are diagnosed at an early stage with tumour confined to the uterine corpus. Although most patients are cured by surgery alone, about 15 - 20% with no signs of locally advanced or metastatic disease at primary treatment recurs, with limited responsiveness to systemic therapy. In light of these recurrences, patients with localized endometrial cancer have 2 major needs: (1) adjuvant therapies that will reduce the recurrence rate, and (2) the ability to target these therapies to the patients most likely to recur. In addition, women with metastatic disease require more effective systemic therapy. The most common basis for determining risk of recurrent disease has been classification of endometrial cancers into two subtypes. Type I, associated with good prognosis, accounts for the majority of cases and is associated with low stage and grade and endometrioid histology. In contrast, type II, is characterized by high stage, high grade and non-endometrioid histology and poor prognosis. However, the prognostic value of this distinction is limited, as up to 20% of type I endometrial cancers recur, while half of type II cancers do not. It is a paradox that despite the fact that several clinically validated prognostic markers are available in endometrial cancer, they are not yet systematically applied for treatment stratification. Also, recent studies have identified new potential targets for novel therapeutics in endometrial carcinomas, such as FGFR2 mutations, mTOR-PTEN changes and alterations in the PI3Kinase- and MYC signalling pathways. The current literature on epidemiology, aetiology, pathology, molecular alterations, staging, treatment and prognostic factors in endometrial cancer will be reviewed. Novel molecular markers will be presented in relation to a clinical case to illustrate how personalized therapy may be implemented for this large patient group in the future.

Key background references:

Dutt A, Salvesen et al, PNAS 2008 (PMID: 18552176)

Salvesen et al, PNAS 2009 (PMID: 19261849)

***Ingfrid S. Haldorsen and Jenny A. Husby***

Currently, there is no established method for functional imaging of angiogenesis in endometrial carcinoma. As newer treatment strategies with anti-angiogenic drugs are introduced, early in vivo assessment of angiogenesis for prognostication and early prediction of therapeutic response is strongly warranted. The aim of this imaging project is to explore if functional imaging by MRI and FDG-PET can detect angiogenic phenotypes in endometrial cancer relevant for prognosis and treatment response to targeted therapy. Patients diagnosed with endometrial carcinoma at the Department of Gynecology, Haukeland University Hospital, have since 2009 been consecutively referred to preoperative pelvic MRI and from 2011 to FDG-PET (whole body examination). Functional imaging findings obtained at MRI and FDG-PET are studied in relation to clinical, histological, and molecular tumor characteristics. For endometrial cancer, functional imaging may provide a better basis for individualized treatment leading to reduced morbidity and facilitate implementation of targeted therapy.