

ONCOGENETIC TESTING FOR ENOCRINE TUMOURS AND TUMOURS WITH A DERMATOLOGICAL MANIFESTATION

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Oncogenetic testing

- **Tests that assist in the diagnosis of specific cancers that have an important hereditary component**
- **Such tests may also assist to identify family members at risk of developing cancer**
- **Subjects at risk are referred to genetic centres for counselling, possibly followed by germline mutation analysis**

Series of four guidelines

- **Third and fourth oncogenetic testing guideline**
- **Previous two guidelines:**
 - colon cancer related syndromes
 - breast cancer related syndromes
- **Collaboration with College of Human Genetics and College of Oncology**

Dermatological component

- **Birt-Hogg-Dubé syndrome**
- **Familial atypical multiple mole melanoma syndrome (FAMM)**
- **Neurofibromatosis 1**
- **Neurofibromatosis 2**

Endocrine tumours

- **Multiple Endocrine Neoplasia type 1 (MEN1)**
- **Multiple Endocrine Neoplasia type 2 (MEN2)**
- **Phaeochromocytoma**
- **Paraganglioma**
- **Von Hippel-Lindau**

Methods

- **Step 1:** Define the clinical questions
- **Step 2:** Search for existing guidelines
- **Step 3:** Screen retrieved guidelines
- **Step 4:** Assess selected guidelines
+ complement with new primary studies and meta-analyses

Methods

- **Step 5:** **Integrate new studies and adapt guidance to local context**

Multidisciplinary guideline development group

- **Step 6:** **External validation**

- **Step 7:** **Stakeholder involvement**

Including patient organisations

- **Step 8:** **Implementation**

- **Step 9:** **Quality indicators and evaluation**



Clinical questions

- **Who should undergo genetic testing?**
 - Both parts
- **What type of follow-up should patients undergo, depending on test results and diagnosis?**
 - Only dermatological part

Birt-Hogg-Dubé syndrome

- **Autosomal dominant condition**
- **Characterized clinically by skin fibrofolliculomas, pulmonary cysts, spontaneous pneumothorax, and renal cancer**
- **Prevalence is estimated to be 1/200 000**
- **Approximately 500 families have been reported worldwide**

Familial atypical multiple mole melanoma syndrome

- **Multiple melanocytic nevi, usually more than 50, and a family history of melanoma**
- **Increased risk for pancreatic cancer and possibly other malignancies**
- **Globally, 5 to 10% of malignant melanomas would occur in familial clusters but variations**

Neurofibromatosis 1

- **Benign and malignant tumors of the central and peripheral nervous system, in addition to malignant diseases affecting other parts of the body**
- **Café au lait spots**
- **About one in 2 500 to one in 3 000 people**

Neurofibromatosis 2

- **Bilateral vestibular schwannomas**
- **Unilateral vestibular schwannoma**
- **Meningioma, glioma, neurofibroma, schwannoma, posterior subcapsular lenticular opacities**
- **One in 25 000 live births**
- **Prevalence 1 in 100 000, increasing due to improved survival**

Multiple Endocrine Neoplasia type 2

- **Estimated prevalence: 2,5 / 100 000**
- **RET gene**
- **Three phenotypes:**
 - **MEN2A (60%): medullary thyroid carcinoma (MTC) + phaeochromocytoma (PHEO) + primary hyperparathyroidism (pHPT)**
 - **MEN2B (5%): MTC + PHEO + typical features**
 - **Familial MTC (35%): MTC only**

Multiple Endocrine Neoplasia type 1

- **Estimated incidence: 250 / 100 000**
- **Menin gene**
- **Three major tumour locations:**
 - Parathyroids
 - Pancreatic islet cells
 - Anterior pituitary gland
- **Clinical diagnosis:**
 - At least 2/3 major tumours
 - 1/3 major tumour in a first-degree relative with MEN1

Von Hippel-Lindau syndrome

- **Estimated prevalence: 1,1 / 100 000**
- **VHL gene**
- **Variety of benign and malignant tumours:
e.g. haemangioblastomas of the retina and
central nervous system, endolymphatic sac
tumours, phaeochromocytomas, renal cell
carcinomas and cysts in various organs
including the kidney, pancreas and liver**

Phaeochromocytoma

- **Estimated incidence: 0,14 / 100 000**
- **Tumours arising from adrenomedullary chromaffin cells that commonly produce catecholamines**
- **Syndromic (RET, VHL) or sporadic (SDH)**

Paraganglioma

- **Estimated incidence: 0,06 / 100 000**
- **Tumours arising from extra-adrenal chromaffin cells of the sympathetic paravertebral ganglia of thorax, abdomen, and pelvis, or from parasympathetic ganglia located along the glossopharyngeal and vagal nerves in the neck and at the base of the skull**
- **Syndromic (RET, VHL) or sporadic (SDH)**

Policy recommendations



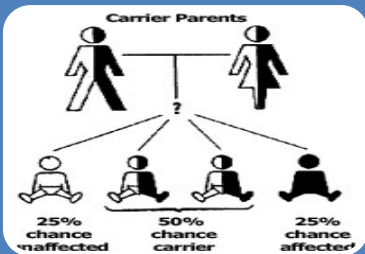
To the College of Human Genetics and the College of Oncology

- To facilitate the implementation of these guidelines (online tool)
- To set up working group to streamline procedures and professional requirements for pre-test counselling and ordering of tests



To the scientific associations of care providers

- To disseminate these guidelines through websites or programmes of continuing education
- To transform these guidelines into attractive and user-friendly tools tailored to specific caregiver groups and patient associations



To the Public Federal Service Public Health

- To consider the recognition of a professional title of 'genetic counselor' and organize an adequate training (Master level)



Colophon

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