Types of ovarian cancer

Ovarian cancer is not a single disease. There are over 30 types of ovarian cancer. The type of ovarian cancer a woman is diagnosed with depends on where the cancer starts and its development. There are three main groups all with their own behaviour and characteristics: epithelial tumours, stromal tumours and germ cell tumours. The three groups can be broken down further into subtypes.

Epithelial ovarian cancer

Around 90% of ovarian cancers are epithelial tumours. These tumours develop on the surface layer of the ovary. There are a number of subtypes of epithelial ovarian cancer, and for this reason researchers are examining whether the different subtypes should receive different treatment.

The different types of epithelial ovarian cancer are:

**Serous tumours** account for more than half of all epithelial tumours. Around 50% of these tumours are malignant (cancerous), 33% are benign (non cancerous) and 17% are of borderline malignancy. Serous tumours occur predominantly in women who are between 40 and 60 years of age.

Researchers are currently trying to subtype serous tumours into serous carcinoma, which tends to be aggressive, and micropapillary serous carcinoma, a low grade, slow growing cancer which often is not responsive to chemotherapy.

**Endometrioid tumours** account for 20% of all epithelial ovarian cancers, and occur primarily in women aged 50-70 years of age. Around 5% of endometrioid cancers are linked with endometriosis, a disorder of the endometrium (the lining of the womb). The majority of these cancers are malignant.

**Clear cell tumours** make up around 6% of all epithelial ovarian cancers, and are most common in women between 40 and 80 years of age. Nearly all clear cell tumours are malignant, and around 50% are associated with endometriosis. Clear cell tumours are considered to be very aggressive forms of ovarian cancer.

**Mucinous tumours** are predominantly found in women between the ages of 30 and 50, and make up around 10% of all epithelial ovarian cancers.

**Undifferentiated or unclassifiable tumours**, are tumours which do not fit into any of the above categories and account for around 15% of all epithelial ovarian cancers.

Germ cell tumours

These tumours account for approximately 5-10% of ovarian cancer cases. Unlike epithelial ovarian cancer which usually affects middle aged and older women, germ cell tumours tend to be found in younger women and the peak incidence is early 20’s. They arise from germ cells, which produce the eggs, and tend to only affect one ovary. Germ cell tumours normally are very curable with around 90% of cases successfully treated.

Sex-cord stromal tumours

Sex cord stromal tumours begin in the connective cells that hold the ovaries together and produce the female hormones oestrogen and progesterone. These tumours can affect all age groups. The majority of these tumours are either benign (non cancerous) or confined to the ovary at the time of diagnosis. Approximately 5% of all ovarian cancers are of this nature.
Staging of ovarian cancer

The staging and grading of ovarian cancer gives doctors important information about the disease and which kind of treatment would be best. It is also an indicator of prognosis. The stage relates to how far the cancer has spread. The grade indicates how much the tumour resembles normal tissue in appearance. Staging is based on a 1-4 scale.

Stage 1

This is where the cancer is confined to one or both ovaries and has not yet spread to other areas. It is divided into three sub-sections:

- **Stage 1a**: The cancer is contained inside one ovary, no ascites (build up of fluid between the two layers of peritoneum), no tumour on external surface, the surface of the ovary is intact.
- **Stage 1b**: The cancer is contained inside the ovaries, no ascites, no tumour on external surface of the ovary, the surface of the ovary is intact.
- **Stage 1c**: 1a or 1b AND one or more of the following: (i) there is some cancer on the surface of at least one ovary; (ii) cancer cells are found in fluid (ascites) taken from inside the abdomen during surgery; (iii) the ovary ruptures (bursts) before or during surgery.

Stage 2

This means that the cancer can be found outside of the ovary or ovaries, but has spread no further than the pelvic region (uterus, bladder, lower intestine). Again there are three sub-sections.

- **Stage 2a**: The cancer has spread into the fallopian tubes or the womb or both
- **Stage 2b**: The cancer has grown into other tissues in the pelvis, for example the bladder or rectum
- **Stage 2c**: 2a or 2b AND one or more of the following: (i) there is some cancer on the surface of at least one ovary (ii) cancer cells are found in ascites taken from inside your abdomen during surgery (iii) the tumour bursts before or during surgery

Stage 3

Stage 3 ovarian cancer involves one or both ovaries and has spread beyond the pelvis into the abdominal cavity (but not the liver) and/or to nearby lymph nodes (those in the groin, behind the womb or the upper abdomen). The three sub-sections are:

- **Stage 3a**: Tumour found in one or both ovaries and the pelvic region but cancer can be seen under the microscope in tissue taken from the lining of the abdomen; lymph nodes are negative for cancer
- **Stage 3b**: Tumour found in one or both ovaries and is confirmed to small tumour growths (less than 2 cm in diameter) on the lining of the abdomen; lymph nodes are negative for cancer
- **Stage 3c**: Tumour found in one or both ovaries and there are tumour growths larger than 2cm on the lining of the abdomen and/or the lymph nodes contain cancer
Stage 4

Stage 4 indicates that cancer cells have spread to other parts of the body such as the liver, lungs and brain.

The grade

The grading of cancer gives doctors an idea about how quickly the cancer may develop. This is done by removing a piece of the suspect tissue and looking at it carefully under a microscope. This indicates how much like or unlike normal tissue the tumour resembles. The term used is differentiation with the well differentiated tumours looking more normal than poorly differentiated.

- **Grade 0**: tumours of low malignant potential, also known as borderline tumours are the most well-differentiated, and least aggressive.
- **Grade 1 (low grade)**: low grade well-differentiated tumours
- **Grade 2 (moderate grade)**: moderately differentiated
- **Grade 3 (high grade)**: poorly differentiated, i.e least normal, generally the most aggressive
Ovarian Cancer Action endeavour to ensure that all of its information and services provide up-to-date and accurate facts about ovarian cancer. We hope that these information sheets support you with your understanding of the disease, but if you have any concerns or questions about any medical symptoms or issues it is important that you make an appointment to see your GP.

Ovarian Cancer Action is dedicated to improving survival rates for women with ovarian cancer by raising awareness of the disease and its symptoms, giving a voice to women and funding research at the Ovarian Cancer Action Research Centre.

Visit www.ovarian.org.uk for further information or contact us on 0300 456 4700.

More information

Ovarian Cancer Action

This fact sheet is part of a series of guides to ovarian cancer. Contact Ovarian Cancer Action on 0300 456 4700 or visit our website at www.ovarian.org.uk to order other documents in the series.

Macmillan Cancer Support

For cancer support contact:
www.macmillan.org.uk
39 Albert Embankment, London, SE1 7UQ
Macmillan helpline: 0808 808 00 00
Monday – Friday 9am-8pm

Maggies Cancer Caring Centres

http://www.maggiescentres.org
1st Floor, One Waterloo Street, Glasgow, G2 6AY
Email: enquiries@maggiescentres.org
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