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CIRCULATING TUMOUR CELLS IN BREAST AND OVARIAN CANCER: SIZE-BASED ISOLATION AND EX VIVO EXPANSION

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Introduction/Background Circulating tumour cells (CTCs) play a crucial role in cancer dissemination and cellular extravasation leading to metastasis. There are only a limited number of CTCs per clinically/ethically allowed cancer patient's blood draw and expanding this population of cells in vitro is crucial in order to provide a reliable number of cells to analyse CTC biology. CTCs can grow in a hypoxic environment and the activation of hypoxia-inducible factor (HIF-1 α) results in increased cell survival and cellular proliferation, leading to cancer progression. Our aim was to optimise cell culture conditions using cobalt chloride (CoCl₂) as a chemical inducer of hypoxia that would allow us to examine growth of cells in real time. Primary ovarian cancer cells would be used for the hypoxia optimisation and conditions adapted ovarian/breast CTC cultures in vitro.

Methodology Primary ovarian cancer cells were cultured in modified media supplemented with various concentrations of CoCl₂ for HIF1 α induction (50, 100, 150 and 200 μ M). Cell viability and the expression of HIF-1 α , PHH3, EpCAM and HER2 were examined in these cells using either ELISA, Immunoblotting or Immunofluorescence techniques. CTCs were isolated from breast and ovarian cancer patients using the ScreenCell[®] Cyto R device and cultured in specially modified media optimised for CTC culture supplemented with 20% FCS, growth factors and additives including: FGF-2, FGF-10, Nicotinamide, Y-27632, Primocin and CoCl₂. EpCAM and HER2 were examined in cultured and expanded CTCs using Immunofluorescence techniques.

Results HIF-1 α expression was induced and cell proliferation and viability were maintained in the primary ovarian cancer cells at a concentration of 100 μ M of CoCl₂. Subsequently this concentration was used for the culturing of isolated CTCs. Using this condition, CTCs were successfully cultured and expanded for more than nine weeks. Based on the morphological and phenotypical characterisation, two phenotypes of CTCs were isolated from a breast cancer patient; epithelial-like expressed EpCAM and quasi-mesenchymal express HER2.

Conclusion We demonstrated the feasibility of culturing cancer patient blood derived CTCs under hypoxic conditions. We also demonstrated the presence of heterogeneous CTC populations; classical epithelial-like CTCs and quasi-mesenchymal subtypes in a breast cancer patient and their corresponding molecular phenotypes. Our work also demonstrated the suitability of size-based isolation for this culturing approach.

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REFERENCES

1. <https://www.nice.org.uk/guidance/cg122> (accessed 13th November 2020)
2. Kumar S, Long J, Rudge G, Manchanda R, Fotopoulou C, Wood N, Duncan T, Balega J, Mukhopadhyay A, Broadhead T. Socqer-2 study: Preliminary analysis of multicentre recruitment after surgery in advanced ovarian cancer. In International Gynaecologic Cancer Society 2016. Lisbon, Portugal
3. Hall M, Savvatis K, Nixon K, Kyrgiou M, Hariharan K, Padwick M, Owens O, Cunnane P, Campbell J, Farthing A, Stumpfle R, Vazquez I, Watson N, Krell J, Gabra H, Rustin G, Fotopoulou C. Maximal-effort cytoreductive surgery for ovarian cancer patients with a high tumor burden: Variations in practice and impact on outcome. *Ann Surg Oncol* 2019;**26**(9): 2943–2951
4. Timmermans M, Sonke GS, Slangen BFM, Baalbergen A, Bekkers RLM, Fons G, Gerstein CG, Kruse AJ, Roes EM, Zusterzeel PLM, Van de Vijver KK, Kruitwagen R, van der Aa MA. Outcome of surgery in advanced ovarian cancer varies between geographical regions; opportunities for improvement in the Netherlands. *European journal of surgical oncology : The journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology* 2019;**45**(8): 1425–1431
5. Warren JL, Harlan LC, Trimble EL, Stevens J, Grimes M, Cronin KA. Trends in the receipt of guideline care and survival for women with ovarian cancer: A population-based study. *Gynecologic oncology* 2017;**145**(3):486–492
6. Katherine E Henson, Lucy Elliss-Brookes, Victoria H Coupland, Elsie Payne, Sally Vernon, Brian Rous, and Jem Rashbass. *Int J Epidemiol* 2020 Feb;**49**(1):16–16h. Published online 2019 Apr 23. doi: 10.1093/ije/dyz076

Vaginal and vulvar cancer

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ANGIOMYOFIBROBLASTOMA VULVAR: CASE REPORT AND LITERATURE REVIEW

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Introduction/Background Angiomyofibroblastoma is part of the benign mesenchymal tumors of the genital tract and was first described by Fletcher in 1992. The vulva represents the main presentation site, but cases have been described at the level of the vagina, cervix, fallopian tubes, the scrotum and the ischioanal fossa. It presents as a mass, generally painless, with well-defined edges and without compromising the overlying skin. It is normally less than 5 cm, but cases of up to 37 cm have been described.

Methodology A 45-year-old woman with a 1 month history of painful vulvar mass of progressive growth. Physical examination reveals a stony, mobile mass of 5 × 5 cm in right labia majora. Initial immunostaining suggested an AMFB, so she was taken to vulvectomy. A review was made of all articles in English or Spanish, published until March 10, 2019, related to the diagnosis and treatment of vulvar AMFB. The search included the PubMed, Embase, Cochrane, LILACS and Scielo databases, with the keywords "Vulvar Angiomyofibroblastoma"

OR "Angiomyofibroblastoma of the vulva with sarcomatous transformation".

Results A total of 69 reported cases were found. In our knowledge, the case presented is the first report of AMFB in Colombia. The age of the patients ranged between 16 and 82 years, with an average of 43 years. The main presenting symptom was the presence of a non-painful vulvar mass, although some of the patients in the reported cases reported pain and dyspareunia (8/69). The evolution time varied between 1 month and 9 years with an average of 21 months, and the size between 1 and 37 centimeters with an average of 7 centimeters. Of the cases taken to immunohistochemical study, 86% were positive for estrogen receptors and 80% for progesterone receptors, 88% were positive for desmin and 98% for vimentin, 92% were negative for S100 and the cases that were positive corresponded to the lipomatous variant, 43% were positive for α -SMA and 34% for CD 34. Definitive diagnosis is based on histological findings. In this reviewed cases, only one relapse was reported. The universal treatment is excision and only one case of relapse was reported, which corresponded to the only reported case of malignant transformation.

Conclusion Vulvar AMFB is a rare mesenchymal tumor, with exclusive surgical treatment and excellent prognosis, although it may have malignant transformation. The reported case could represent the second case of AMFB with malignant transformation.

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Disclosures

Organization of gynaecological cancer care

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SIGNIFICANT VARIATION IN TREATMENT AND SURVIVAL OUTCOMES IN STAGE 2-4 OVARIAN CANCER IN ENGLAND: RESULTS FROM THE NATIONAL OVARIAN CANCER FEASIBILITY AUDIT PILOT

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Introduction/Background Complete cytoreductive surgery and platinum-based chemotherapy is standard of care in the United Kingdom (NICE, 2011), yet studies indicate substantial variation in the utilization of both (Kumar et al, 2016, Hall et al). Recent work from the Netherlands shows variations in treatment for ovarian cancer across regions; however, contribution to survival was unclear (Timmermans et al, 2019). Care that is not compliant with guidelines is also seen in other countries, including the USA (Warren et al, 2017).

As part of the Ovarian Cancer Audit Feasibility Pilot, geographic variation in treatment was investigated with the objective of informing improvements in treatment and outcomes for all women diagnosed with ovarian cancer in England.

Methodology Ovary, fallopian tube and primary peritoneal carcinomas ('ovarian cancers') diagnosed between January 2016 and December 2018 were audited using data extracted from the national cancer registry (Henson et al.). Borderline tumours were excluded. Data is routinely collected for every patient with cancer in England through a national dataset; Cancer outcomes and Services Dataset (COSD). This information was supplemented with relevant data from the Systemic Anti-Cancer Therapy (SACT) dataset for patients receiving chemotherapy and Hospital Episode Statistics (HES) for admitted patients. Linear probability models were constructed adjusting for tumour morphology, stage at diagnosis, patient age at diagnosis; Charlson comorbidity index, area income