prevenção do desenvolvimento da doença [1]. Apesar de ser a melhor abordagem terapêutica para esta patologia, o tamoxifeno está associado a vários efeitos secundários, incluindo diminuição da performance cognitiva [2,3]. O aumento dos níveis de hormonas esteróides nos ratos fêmea promovem mudanças estruturais e fisiológicas na formação do hipocampo, conduzindo a melhoria dos processos de aprendizagem e memória [4]. Tendo em conta que este mecanismo depende da ativação de ERs, e sabendo que o tamoxifeno é um modulador seletivo destes recetores facilitando ou impedindo a sua ação [5], terapias a longo-prazo com este fármaco podem limitar a ação de hormonas esteróides nos processos cognitivos. **Objetivos:** Estudaram-se os efeitos da terapia a longo-prazo com tamoxifeno nos mecanismos de aprendizagem e memória dependentes do hipocampo, bem como o impacto deste fármaco na plasticidade bioquímica na formação do hipocampo. **Material e Métodos:** Ratos Wistar fêmea de 3 meses foram submetidos a uma dose diária de 50µl de tamoxifeno em 0.5% de hidroxipropilmetilcelulose misturada em chocolate. O grupo controlo recebeu uma dose diária de 50µl de uma solução de 0,5% hidroxipropilmetilcelulose. Foram registados regularmente o consumo sólido e líquido, o peso corporal e o ciclo éstrico. Ao fim dos 3 meses de tratamento, os animais foram anestesiados e metade de cada grupo foi sacrificado por perfusão intracardíaca com paraformaldeído. Os encéfalos foram removidos, pesados e seccionados em vibratome a 40µm. As secções contendo as áreas de interesse foram selecionadas de forma aleatoriamente sistemática, numa amostragem de 1/12, e processadas por imunohistoquímica para detetar a expressão de Calbindina, Calretinina, Neuropeptídeo Y e Parvalbumina. **Resultados:** A administração de tamoxifeno induz variação da expressão de neuropeptídeos na formação do hipocampo, nomeadamente Calbindina, Calretinina, Neuropeptídeo Y e Parvalbumina. **Conclusões:** Mais estudos são necessários para melhorar a definição de terapêuticas de longo prazo.

Palavras-chave: tamoxifeno; cancro da mama; recetor de estrogénio; cognição; hipocampo

Referências:

[1] Burstein, H.J., et al. J Clin Oncol, 2014. 32(21): p. 2255-69.

[2] Buwalda, B. and S.B. Schagen. Life Sciences, 2013. 93(17): p. 581-588.

[3] Palmer, J.L., et al. J Cancer Surviv, 2008. 2(4): p. 275-82. Korol, D.L. and S.L. Pisani. Hormones and Behavior, 2015. 74: p. 105-115.

[4] Jordan, V.C. Annals of the New York Academy of Sciences, 2001. 949(1): p. 72-79.

POSTER 52

Phenotypic evaluation of the ovarian tumor cells presents in malignant ascites

Sílvia Ferreira[1,2,*], **Mariana Nunes**[1,3], **Diana Nunes**[1,2], **Sara Ricardo**[1,2,4]

[1]*Differentiation and Cancer Group, Institute for Research and Innovation in Health (i3S) of the University of Porto/Institute of Molecular Pathology and Immunology of the University of Porto (Ipatimup), 4200-135 Porto, Portugal.*

[2]*TOXRUN – Toxicology Research Unit, University Institute of Health Sciences, CESPU, CRL, 4585-116 Gandra, Portugal.*

[3]*Institute of Biomedical Sciences Abel Salazar (ICBAS), University of Porto, 4050-313 Porto, Portugal.*

[4]*Faculty of Medicine, University of Porto (FMUP), 4200-319 Porto, Portugal.*

*✉ *a27544@alunos.cespu.pt*

Doi: https://doi.org/10.51126/revsalus.v4iSup.319

Resumo

Introduction: One of the signs of ovarian cancer dissemination is the accumulation of malignant ascites in the peritoneal cavity linked to poor prognosis, metastasis and chemoresistance [1]. Mucin-16 (MUC16) and Mesothelin (MSLN) are two key players in the multistep process of peritoneal dissemination of ovarian cancer, both associated with the presence of malignant ascites and poor progression-free survival [2, 3]. Cancer stem cells contribute to pathogenesis, chemoresistance, and malignant behavior of tumor cells. Sex-determining region Y-box (SOX2) and aldehyde dehydrogenase 1 (ALDH1) have been used as cancer stemness markers for detecting cancer cell proliferation, migration, invasion, and metastasis and have been correlated with chemoresistance and poor prognosis [4, 5]. **Objective:** The aim of this study was to evaluate the expression profile of some important biomarkers in ovarian tumor cells suspended in the malignant ascites. **Material and Methods:** In this study, we analyzed the expression of relevant biomarkers to characterize chemoresistance profiles, e.g., MUC16, MSLN,

ALDH1, and SOX2 by immunocytochemistry in a series of malignant ascites samples (n=15) obtained from ovarian cancer patients (n=11) before (n=7) and after (n=8) treatment regiments. **Results:** All the malignant ascites (15 samples) present high expression levels (76 – 100% of tumor cells) of MUC16 and MSLN was expressed at high levels (51 – 75% and 76 – 100% of tumor cells in 2/15 and 13/15 samples, respectively), both at time of diagnosis and after chemotherapy treatment. There was no clear association between MSLN and/or MUC16 with diagnosis and treatment since all cases were positive for MSLN and MUC16. In most cases, ALDH1 was negative (11/15 samples), low/moderate expressed (about 11 – 25% or 25 – 50% of tumor cells, respectively, in 3/15 samples), or high expressed (76 – 100% of tumor cells in 1/15 samples). SOX2 was, in most cases, negative (13/15 samples). However, in two samples obtained after chemotherapy (2/7 samples) SOX2 was low/moderate expressed (about 11 – 25% or 25 – 50% of tumor cells, respectively).
Conclusions: In summary, the expression of MUC16 and MSLN is high in all the malignant ascites samples, and SOX2 and ALDH1 were mostly negative or low/moderate expressed. We did not find a correlation with different treatment regimens.

Keywords: biomarkers; cancer stem cells; immunocytochemistry; malignant ascites; ovarian cancer.

Referências:

[1] Ford CE, Werner B, Hacker NF, Warton K. The untapped potential of ascites in ovarian cancer research and treatment. Br J Cancer. 2020;123(1):9-16.
[2] Coelho R, Ricardo S, Amaral AL, Huang YL, Nunes M, Neves JP, et al. Regulation of invasion and peritoneal dissemination of ovarian cancer by mesothelin manipulation. Oncogenesis. 2020;9(6):61.
[3] Coelho R, Marcos-Silva L, Ricardo S, Ponte F, Costa A, Lopes JM, et al. Peritoneal dissemination of ovarian cancer: role of MUC16-mesothelin interaction and implications for treatment. Expert Rev Anticancer Ther. 2018;18(2):177-86.
[4] Nunes M, Pacheco F, Coelho R, Leitao D, Ricardo S, David L. Mesothelin Expression Is Not Associated with the Presence of Cancer Stem Cell Markers SOX2 and ALDH1 in Ovarian Cancer. Int J Mol Sci. 2022;23(3).
[5] Pieterse Z, Amaya-Padilla MA, Singomat T, Binju M, Madjid BD, Yu Y, et al. Ovarian cancer stem cells and their role in drug resistance. Int J Biochem Cell Biol. 2019;106:117-26.

POSTER 53

Biomarkers in endometriosis: from diagnosis to treatment

Ana Sousa[1], **Juliandra Salumbo**[1,2]

[1]*TOXRUN – Toxicology Research Unit, University Institute of Health Sciences, CESPU, CRL, 4585-116 Gandra, Portugal.*

[2]*Clínica Multiperfil, Rua 21 de janeiro, Samba, Luanda, Angola.*

*✉ *A23452@alunos.cespu.pt; A32706@alunos.cespu.pt*

Doi: https://doi.org/10.51126/revsalus.v4iSup.320

Resumo

Introdução: Endometriosis is a chronic, inflammatory disease characterised by the presence of endometrial-like tissue outside the uterus [1]. Among the main symptoms are abdominal pain, dyspareunia, dysuria, painful defecation, and infertility [1]. Endometriosis is divided in four stages: minimal, mild, moderate and sever stages. Diagnosis is usually late and done by histological analysis, ultrasounds, and/or quantification of the biomarker CA125. Treatment consists of hormone therapy, analgesics, and laparoscopy. Often, in late diagnosed patients, organ removal beyond the uterus is also necessary [2]. To provide a less invasive treatment, an early diagnosis is necessary, this urging the discovery of promising biomarkers with high expression and specificity for the different stages of the disease [3]. **Objetivos:** Herein, we intended to provide a detailed mapping of the endometriosis biomarkers described in the literature and discuss the most promising ones for the early diagnosis of the disease. **Métodos:** Review papers published in PubMed between 2015 and 2022, were revised and relevant information compiled. **Resultados:** The journey to endometriosis diagnosis is long and fraught with barriers and misdiagnoses. Although being the most described, CA125 is an unspecific and insensitive biomarker for endometriosis [3]. The aryl hydrocarbon receptor (AhR), which is involved in regulation of the endometriotic inflammatory process, is appointed as a promising biomarker for the prognosis of the disease and as a therapeutic target [4]. Other biomarkers of interest include P450/aromatase in menstrual fluid; IL-10, which has a high tissue expression, although being restricted locally [3]; MAPK/ERK, whose high expression is correlated with endometriotic lesions [5]; MMP-9, as increased levels are observed in patients with advanced endometriosis stages; MIF for ectopic endometrium [2]; and VEGF-C,