

## Editorial

# Hormone Resistance as a Treatment Target for Breast Cancer

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The publication of the BOLERO 2 trial [1], made progress in identifying a way to approach different from the patients who make resistance to hormone therapy, everolimus is a drug that acts on the m-Tor [2] complex, which is in the center of the PI3K signaling pathway. Today is underway BOLERO 6 trial [3], ("A phase II, randomized, open-label, three-arm, of everolimus in combination with exemestane versus everolimus monotherapy versus capecitabine, for the treatment of postmenopausal women with breast cancer with estrogen receptor positive, locally advanced, recurrent or metastatic after recurrence or progression to letrozole or anastrozole prior") that attempt to clarify its advantage over chemotherapy (capecitabine) in first line in patients with breast cancer metastatic hormone receptor-positive who have resorted to treatment with an aromatase inhibitor.

As for via PI3K -AKT - Mtor know that its mutation or overexpression can cause resistance to hormonal treatment and assumed poor prognosis [4], and may be a target for hormone-dependent patients who have become resistant to conventional treatment.

PI3K is a family of enzymes with different subunits and isoforms which are associated with different cell biological processes [5]. Buparlisib, BKM 120, [6] is a paninhibitor PI3K, both the wild-type form and the mutated, which is being developed clinically in different studies encompassed in the name BELLE [7]. In BELLE 2 trial, fulvestrant, fulvestrant versus placebo - buparlisib in patient with metastatic hormone receptor-positive breast that have become resistant to treatment with an aromatase inhibitor compared cancer, the combination with fulvestrant is a very interesting alternative there preclinical studies indicate that this combination may be effective in cell lines that have become resistant to treatment with everolimus [8]. Also underway is the first line combination of palliative treatment with paclitaxel buparlisib (BELLE 4).

Another way to try a different approach to overcome the resistance is hormone action on nuclear cyclins, cell cycle regulatory proteins. Palbociclib [9] is a drug that acts at this level and has had a very rapid development, from communication of a phase II [10] in patients with metastatic breast RH + cancer front line and treatment with letrozole versus letrozole monotherapy

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with a Hazard Ratio of 0.37 to the launch of a phase III adjuvant treatment after neoadjuvant hormone-dependent patients who have not achieved a complete pathological response, PENELOPE study [8,11], only 2 years, which probably constitutes a milestone in the development of a drug in Medical Oncology.

Win hormone resistance de novo or acquired is crucial for the patient with metastatic breast cancer hormone-continue receiving treatment aimed not cytotoxic [12], hormone treatment was the first personalized or targeted which therapy we have arranged for treatment breast cancer, its association with other targeted therapies represents an advance in the treatment of this disease [13].

In short, the development of a new philosophy for the treatment of breast cancer will be an improvement in patient survival and their quality of life [14].

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