RESEARCH ARTICLE

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The Causal Relationship of Anti-Cancer Effect with Physical Activity Evinced by the Consistent Anti-Cancer Effect of the Ou MC Decrescendo Phenomenon

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Abstract

A causal relationship between physical activity and cancer prevention has not been firmly established in the medical literature. The Ou MC decrescendo phenomenon treatment (OuDPt) is a self-administered protocol in which placing the contralateral hand on or near the affected area of the body produces a zone of decreased pain or inflammation. OuDPt has also been shown to elicit an anti-cancer effect that consistently induces tumor regression in several cancer types, including uterine, ovarian, and pancreatic cancer, with documented apoptosis and squamous metaplasia in uterine endometrial cancer. The anti-cancer effects of OuDPt are associated with factors such as the frequency, duration, and intensity of treatment, as well as the accessibility and susceptibility of the tumor. This relationship mirrors the dynamics between antibiotics and bacterial infections, where similar factors come into play. Given that OuDPt is self-administered and easy to perform, and produces consistent anti-cancer effects, this procedure could be potentially harnessed for cancer prevention. Further study of the use of OuDPt for cancer prevention is warranted.

Keywords: Physical activity- anti-cancer effect- cell polarity- Ou MC decrescendo phenomenon- cancer prevention

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Introduction

Although cancers can result from carcinogens, not all cells exposed to carcinogens become cancerous. The process of carcinogenesis involves complex steps that remain poorly understood. Beyond contemporary methods, such as medications and vaccines, exist alternative strategies such as physical activity (Brash et al., 2009; National Cancer Institute, 2020). Cancer hallmarks are malignant traits of cancer cells. Suppression of the malignant traits of cancer cells could lead them to behave more like healthy cells, conforming to apoptotic regulation, growth suppression, and metastatic hindrance. However, few therapies target the mitigation of the malignant traits of cancer cells.

The normalization of tumor cell function may involve not only tumor cells but also their microenvironment. The tumor microenvironment has been regarded as a main factor in tumor development and metastasis. Normalizing the tumor microenvironment may suppress metastasis, prevent uninhibited proliferation, minimize angiogenesis, and eliminate abnormal cells via the normalized host immunological system.

Physical activity has been associated with reduced cancer risk in many studies. However, evidence linking higher physical activity to lower cancer risk comes mainly from observational studies, and a causal relationship has not been proven (National Cancer Institute, 2020).

In this report, we review the anti-cancer effects of the Ou decrescendo phenomenon treatment (OuDPt) in the context of physical activity and human body anatomical axes (HBAAs).

Materials and Methods

Cell polarity, HBAAs, and cancer

Most adult human cells and tissues are polarized, which enables their normal function. Disruption of polarity in cancer cells results in these cells losing their ability to behave normally in response to physiological cues and is frequently assumed to be a common feature of cancer progression. However, if cancer cell polarity can be normalized or reinforced, it may also relatively normalize the function of these mutant cells. Many of the signaling molecules that are active during the specification of embryonic left-right asymmetry are also active during tumor progression. It can thus be hypothesized that the occurrence of cancer is associated with signaling

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molecules related to embryonic body axis development (Ou et al., 2016).

Pituitary homeobox 2 (PITX2), NODAL, and LEFTY-1 are important genes that control embryonic development along the left–right axis in mammals and have been reported to be related to the development or suppression of various cancers, suggesting potential therapeutic relevance. For example, PITX2 protects renal cancer cell lines against doxorubicin toxicity, NODAL promotes breast cancer growth or progression, and LEFTY-1 expression is suppressed in induced pluripotent cancer cells (Lee et al., 2013; Quail et al., 2012; Saito et al., 2013). Thus, a large number of signaling molecules that are active during the specification of embryonic left-right asymmetry are active during tumor progression.

Ou MC decrescendo phenomenon treatment (OuDPt) with human body anatomical axis interaction

We initially described Ou decrescendo phenomenon (OuDP) in a prospective study of 252 patients with abdominal pain between 2006 and 2009 (Ou et al., 2012; 30). In that study, the physician applied palpation with his contralateral hand to produce a zone with reduced tenderness between pelvic and non-pelvic area, which is named the OuDP, to locate pelvic and non-pelvic pain, thereby distinguishing pelvic diseases from non-pelvic diseases. In a subsequent study of 39 patients, palpation with the ipsilateral hand did not produce a zone of reduced tenderness (Ou et al., 2014). Linguistic studies have provided support for a space-time congruency effect, which operates from the left to right axis of the human body (Torralbo et al., 2006). This left-right axis interaction can be recognized in the OuDP.

Studies have shown that mutual interactions between bilateral parts of topographically symmetrical organisms may induce and reinforce inflammatory reactions and pain sensations on the contralateral side of the body. Examples of such phenomena include contralateral arthritis induced by unilateral arthritis in rats as well as symmetrically developed arthritis, pulmonary fibrosis, glomerulonephritis, and sympathetic ophthalmia in humans (Shenker et al., 2003). These interactions occur along the left-right HBAA.

In contrast to the physician-administered OuDP manipulation procedure described above, Ou MC decrescendo phenomenon treatment (OuDPt) is mainly a self-administered procedure in which the patients apply their contralateral hand to an affected area. This procedure was found to relieve pain associated with inflammation, whereas use of the ipsilateral hand did not (Ou et al, 2008). Similarly, in a study of 22 patients with organ inflammation (Ou et al., 2014), OuDPt reduced organ inflammation and led to functional recovery. Because OuDPt rendered immediate effects on pain, inflammation, and uterine neoplasm bleeding, these benefits appear to reflect direct functional normalization of tissues rather than an indirect effect.

Results

The constant cause-effect reaction by Ou MC decrescendo phenomenon treatment on cancer

OuDPt for neoplastic diseases is mainly performed by patients placing their contralateral hand over the site of the lesion (Figures 2 and 3) (Ou et al., 2014, 2017). While performing OuDPt, the contralateral hand is placed over the lesion along the left-right, dorsoventral, or vertical HBAAs (Ou et al., 2017; Ou et al., 2020). If OuDPt is not effective, measures such as increasing the duration or frequency of administration, or placing the hand nearer to the lesion may be helpful. However, a longer duration may cause organ compression, and pressing too forcefully may cause tumor bleeding or exfoliation, which may cause cancer metastasis (Ou et al., 2019).

OuDPt has shown consistent anti-cancer effects in published studies, as summarized in Tables 1 and 2. For example, in a patient with stage IIIB endometrial cancer (case 2), a tumor biopsy specimen obtained 29 days after initiating OuDPt showed squamous metaplasia and apoptosis of cancer tissue (Figure 1, Ou et al., 2015). OuDPt was found to prominently decrease cancer-related bleeding in uterine leiomyosarcoma (case 1) and uterine endometrial cancer (case 2, 3, 4), stopping intestinal bleeding, and releasing lower-leg pitting edema in ovarian cancer with carcinomatosis (case 5) (Ou et al., 2015). OuDPt was also found to induce regression of endometrial cancer (case 2, 3), ovarian cancer (case 5), and suspected pancreatic cancer in patients (case 9) while receiving

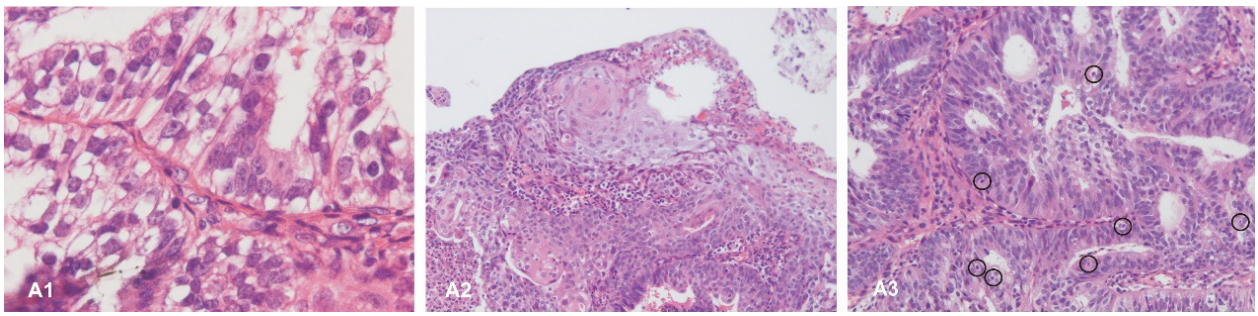

Figure 1. Endometrial biopsies of the patient with uterine endometrioid carcinoma IIIB (Case 2) before and after OuDPt only treatment. (A1) Biopsy before OuDPt showed well-differentiated endometrioid carcinoma with secretory vacuoles with no definite squamous metaplasia or apoptosis-like lesions identified (hematoxylin and eosin [HE], magnification ×400). (A2), (A3) Endometrial biopsy 29 days after OuDPt treatment. (A2) showed prominent squamous metaplasia of tumor cells and (A3) showed numerous apoptosis cells (black circles) (HE, magnification × 100). (Photo courtesy of Dr. Ou MC, Ou MC et al., 2015;7)

Table 1. Response of Solid Tumors with Initial Ou MC Decrescendo Phenomenon Treatment in 6 Months

Case no.	Cancer	Age/Sex	Stage	Concomitant treatment	Total treatment period	Short-term effect	Reference
1	Uterine leiomyosarcoma	59/F	IB	Nil	3 weeks	Heavy uterine bleeding diminishing to trace with 2D OuDPt before hysterectomy.	Ou et al., 2014, 2015;7
2	Uterine endometrial cancer	49/F	IIIB	Nil	5 months	Heavy uterine bleeding immediately diminishing to trace with 2D OuDPt; Squamous metaplasia and apoptosis of cancer tissue after 29 days 2D OuDPt; Cancer stage IIIB regressing to stage IA with 5 months 2D OuDPt.	Ou et al., 2015;7,
3	Uterine endometrioid cancer	50/F	II	Nil	6 months	Seldom with uterine bleeding.	Ou et al., 2019;1
4	Uterine endometrial cancer	53/F	IA	Nil	1 month	Uterine bleeding stopped in 1 week and did not recur with 2D OuDPt.	Ou et al., 2015;3
5	Ovarian cancer	56/F	IVA	Nil	6 months	Intestinal bleeding stopped with immediate lower extremity pitting edema resolution with 2D OuDPt; Ovarian tumor size maintained stationery over 6 months with 2D OuDPt.	Ou et al., 2017; 56
6	Left fungating breast cancer	74/F	IIB	Nil	3 weeks	Tumor regression.	Ou et al., 2019; 1
7	Pancreatic cancer	63/M	III	n.a.	4 months	Tumor regression confirmed by PET scan.	Ou et al., 2019; 1
8	Pancreatic cancer	69/M	III	CT	2 weeks	CA199 decreased from 14,900 U/ml to 5,534 U/ml after initiating 2 weeks 2D OuDPt in combination with chemotherapy which had shown ineffective.	Ou et al.,2019;1
9	Suspected pancreatic cancer	51/F	IA	Nil	17 days	CA199 decreased from 1090 U/ml to 170.5 U/ml with 17 days 2D OuDPt.	Ou et al., 2015;7
10	Suspected skin metastasis of CML	39/F	Chronic phase	CT	4 weeks	Tumor regression with OuDPt.	Ou et al., 2014

2D OuDPt, 2 dimensional Ou MC decrescendo phenomenon treatment through left-right, dorsoventral human body axis; CML, chronic myeloid leukemia; CT, chemotherapy: n.a., not applicable; PET, positron emission tomography; Case 2, 3, 5, 9 had continued OuDPt more than 6 months (Table 2).

no concomitant therapy. In the patient with endometrial cancer stage III (case 2), short-term OuDPt induced prominent squamous metaplasia and apoptosis of the tumor (Figure 1). A subsequent radiological study confirmed intrauterine cancer regression, resolution of colon and cervical involvement, and elimination of posterior uterine wall penetration by tumor (Ou et al., 2015). The endometrial cancer in this patient resumed growth after 2 years of 2-dimensional (2D, comprising left-right and dorsoventral HBAAs) OuDPt but regressed again with 3-dimensional (3D, comprising left-right, dorsoventral, and vertical HBAAs) OuDPt (Ou et al., 2017). In another patient, an ovarian cancer with carcinomatosis (case 5) stabilized in size during 2D OuDPt but progressed after 7 months of treatment, then decreased in size and releasing trapped intestinal loop by carcinomatosis with 3 months of 3D OuDPt (Ou et al., 2017). In a patient with stage III pancreatic adenocarcinoma (case 8), CA199 levels

Table 2. Response of Solid Tumors after Ou MC Decrescendo Phenomenon Treatment for more than 6 Months

Case no.	Cancer	Age/Sex	Stage	Concomitant treatment	Total treatment period (including short-term period)	Long-term effect	Final outcome	Reference
2	Uterine endometrial cancer	49/F	IIIB	Nil	4 years	Tumor began to progress after 2years OuDPt, but regressed again with 3D OuDPt.	Progression	Ou et al., 2017; 56 2019;1.
3	Uterine endometrial cancer	50/F	II	Nil	8 months	Prominent tumor regression with 8 months 2D OuDPt; then, stopping OuDPt, tumor found resuming growth 5 months later.	Progression	Ou et al., 2019;1
5	Ovarian cancer	56/F	IVA	Nil	2 years	Tumor resumed growth 7 months after initiating 2D OuDPt; Tumor regressed again with releasing trapped colon loop by carcinoma-tosis with 3 months 3D OuDPt.	Progression	Ou et al., 2017; 56, 2019;1
9	Suspected pancreatic cancer	51/F	IA	Nil	6 years	Tumor size decreased from 1.6 x 1.7 cm to 1.02 x 0.96 cm with 4 months 3D OuDPt; CA199 became to 52.3 U/ml with 7 months OuDPt; No tumor identifiable by MRI with 1 year 3D OuDPt. Thereafter, only performing 2D OuDPt and no tumor recurrence.	No recurrence	Ou et al., 2017; 56, 2019;1

3D OuDPt, 3 dimensional Ou MC decrescendo phenomenon treatment through left-right, dorsoventral and vertical human body axis; All 4 patients were from table1.

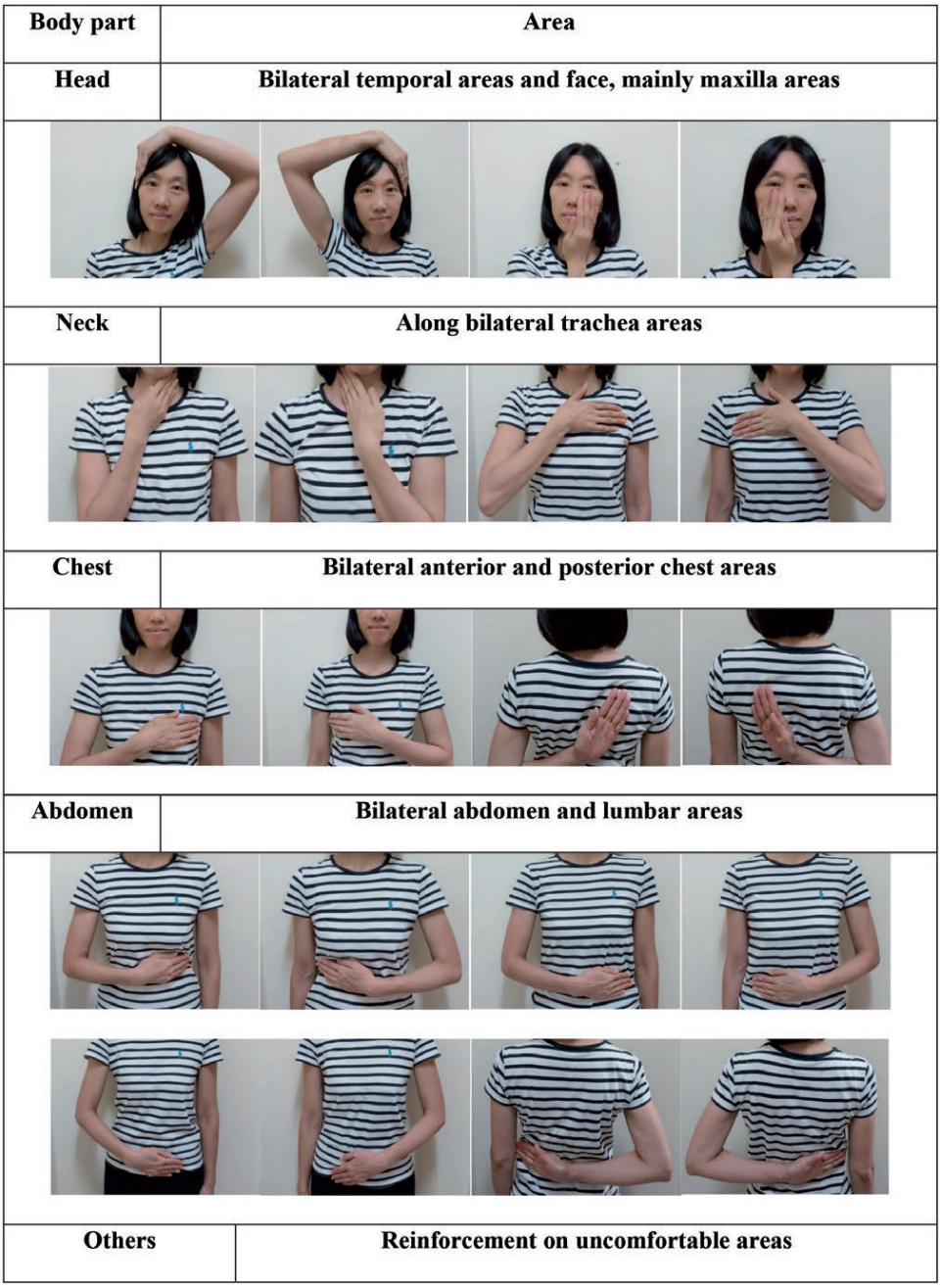

Figure 2. Ou MC Decrescendo Phenomenon Treatment with Multiple Human Body Anatomical Axes Interactions. (Permission from Dr. Ou MC, Ou MC et al., 2020).

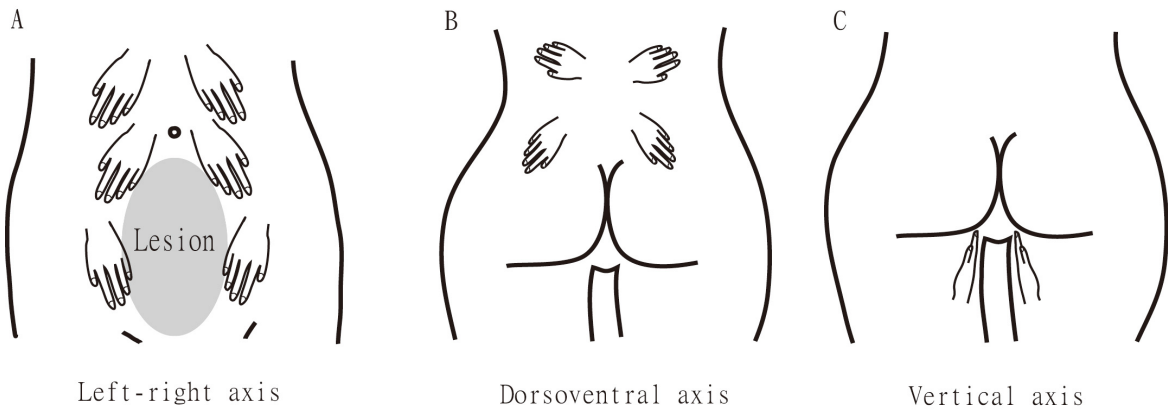

Figure 3. Ou MC Decrescendo Phenomenon Treatment with Multiple Human Body Anatomical Axes Interactions for Abdominal Neoplasm. (Photo courtesy of Dr. Ou MC, Ou MC et al., 2017;56).

initially increased from 10,200 U/ml to 14,900 U/ml despite chemotherapy with weekly gemcitabine and daily TS-1 (a combination of tegafur, gimeracil, and oteracil). Subsequently, CA199 levels decreased to 5,534 U/ml with 3 weeks of OuDPt in combination with the chemotherapy (Ou et al., 2019). The advanced endometrial and ovarian cancers described here resumed progression despite continuing OuDPt (Table 2), indicating that the duration of the anti-cancer effect is limited.

As noted above, the effect of the OuDPt can be increased by, increasing the treatment duration, increasing the treatment frequency and decreasing the distance between the hand and the lesion (e.g., approaching deep organ in water of case 2) (Ou et al., 2016). The most effective distance appears to be within 0.5 cm of the lesion, which makes it less effective for greater lesions (Ou et al., 2014). Other factors, such as susceptibility and accessibility, appear to limit the effect of OuDPt (Ou et al., 2019;1).

Discussion

The anti-cancer mechanism of OuDPt

The signaling system of embryonic axes has been shown to impart polarization of individual cells in Drosophila (Gray et al., 2011). Mammals have multiple versions of each Drosophila polarity gene. Such polarity systems play an important role in normal cell functions of all vertebrates, including humans, from the earliest stages of embryonic development to adult life. Thus, HBAAs may also impart polarity to individual cells just as embryonic axes do (Ou et al., 2015).

OuDPt performed along the 3D human body polarity system appears to suppress neoplasm development more efficiently than does OuDPt performed along the 2D polarity body system (Ou et al., 2017), providing evidence that the effect of OuDPt is associated with interaction of HBAAs. Polarized 3D tissue organization has been reported to be a potential non-canonical tumor suppressor that prevents the development of neoplastic features in cells carrying mutations, thereby suppressing tumor development and progression (Lee et al., 2008). The interactions among multiple HBAAs with OuDPt also imply a 3D organization model that, similar to the 3D tissue organization by Lee et al., (2008), reinforces cell polarity of mutant cells and thereby attenuates proliferation of and invasion by these cells (Ou et al., 2017). The tumor regression induced by OuDPt may indicate that disruption of cell polarity is not merely a by-product of cancer cells but also a contributing factor in cancer initiation and development.

Active cancer prevention with ODPT

Longitudinal observational studies have shown that greater physical activity is associated with lower cancer risk. Although observational studies cannot prove a causal relationship, they may provide evidence of a causal connection when studies in different populations have similar results and when a possible mechanism for a causal relationship exists (National Cancer Institute, 2020). OuDPt demonstrates a causal relationship between physical activity and anti-cancer effects. Because OuDPt is easy to perform and can be done by patients themselves, it may hold promise as a low-cost cancer prevention method. However, further study is warranted (Ou et al., 2018).

In conclusions, observational studies provide evidence that higher levels of physical activity are linked to lower risks of several types of cancer, including bladder, breast, colon, endometrial, esophageal, kidney, and lung (National Cancer Institute, 2020). However, available data are based on observational studies and cannot confirm a causal relationship of physical activity with anti-cancer effects. OuDPt as a physical activity has demonstrated a consistent anti-cancer effect on tumors. OuDPt is easy to perform, can be done by patients themselves, and can be a part of most physical activity, which may help prevent cancer. Thus, OuDPt may hold promise as a low-cost cancer prevention method.

Author Contribution Statement

All authors contributed equally to the conception, data collection and interpretation, drafting, and critical revision of this article and approved the final submitted version.

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Availability of data and material

The authors confirm that the data supporting the findings of this study are available within the article.

Conflicts of Interest

None declared.

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