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### Onset of dysgeusia in cancer patients receiving outpatient chemotherapy: Review

Many cancer patients on outpatient chemotherapy complain of dysgeusia. Thus, we searched the literature database of four journals that publish articles related to anti-cancer chemotherapy and taste perception and reviewed knowledge useful for nursing care of cancer patients. We found that dysgeusia frequently occurred at a relatively early stage when FOLFOX/FOLFIRI combined with 5-FU or regimens involving a taxane and related agents were used. The risk of dysgeusia was significantly higher with DTX than with other regimens. This can be explained by the formation of a chelate between 5-FU and zinc, which in turn elevates urinary excretion of zinc, leading to zinc deficiency and perception of all basic tastes (saltiness, sweetness, sourness and umami) except bitterness, tended to be impaired. The frequency of impairment of saltiness perception appeared to be relatively high. Taxanes and related regimens were associated with a high occurrence rate of impairment of umami perception and with severe changes in saltiness perception. Considering the report showing the link between the impairment of saltiness perception and low plasma zinc levels, regimens involving 5-FU is likely to cause disorders in saltiness perception. Possible causes of dysgeusia attributed to anti-cancer agents include inhibition of taste bud metabolism, lingual nerve disorder and zinc deficiency. It is likely that dysgeusia in patients receiving a taxane and related agents is attributed to peripheral nerve disorders, since these agents do not cause zinc deficiency. Experimental S-1 administration in rats suggested the possibility that dysgeusia is caused by damage to the gustatory nerve but not mucosal epithelia and taste buds. Regimens involving relatively low doses of 5-FU, for example CMF and FEC therapies can cause dysgeusia, although it did not appear severe enough to influence patients' appetite. The frequency of dysgeusia in patients receiving Gemcitabine (GEM) was also significantly low.

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#### Biography

Yoshiko Hasebe has been working at Nayoro City University, School of Health Science. She is a Professor of Adult Nursing and has her expertise in evaluation and passion in improving the nursing practice. She has published many textbooks and DVDs about nursing arts in Japan.

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