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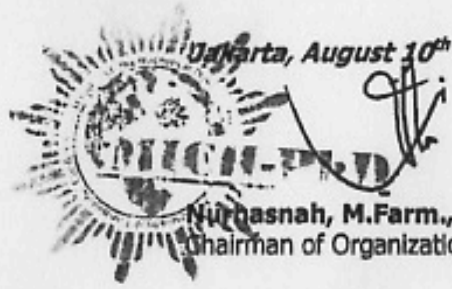
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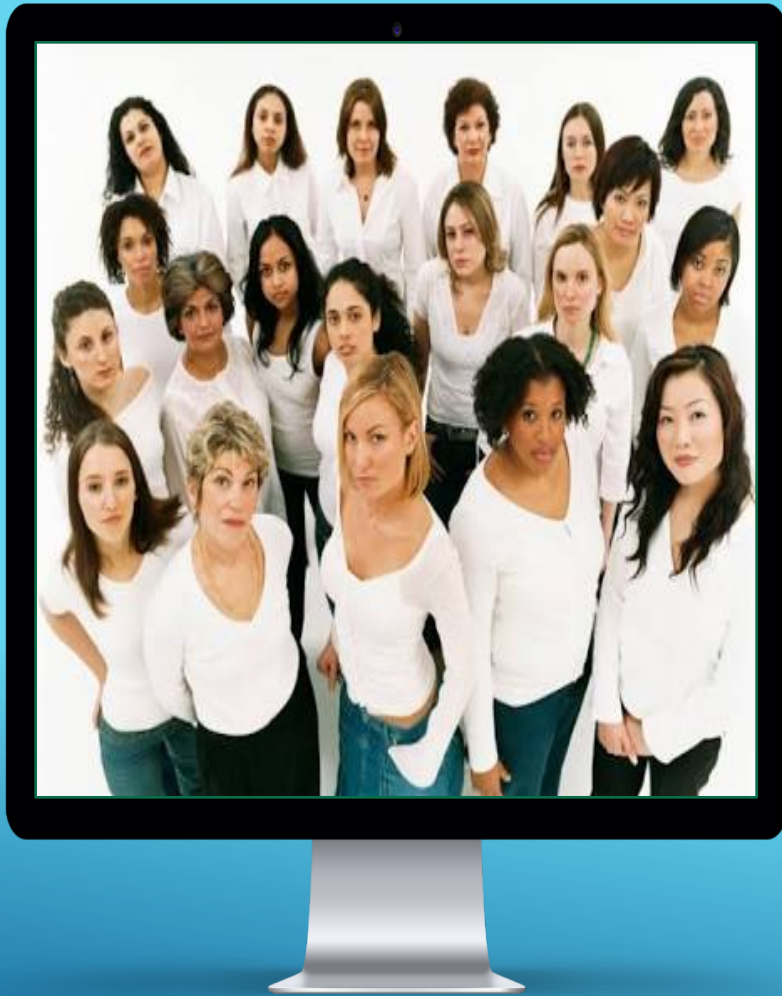
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**EVALUATION OF CA 125, BUN, AND CREATININE
SERUM IN OVARIAN CANCER PATIENTS WITH
PACLITAXEL-CISPLATIN CHEMOTHERAPY
TREATMENT: A CASE STUDY IN SANGLAH HOSPITAL
DENPASAR**

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BACKGROUND



Indonesia is the third country in Asia with most ovarian cancer cases in 2012 (Raezi *et al.*, 2016). In 2014, ovarian cancer is the second most suffered gynecological cancer by women in Sanglah Hospital (Dhitayoni dan Budiana, 2017)

Chemotherapy is a therapy given to ovarian cancer patients by giving cytotoxic drugs either in single regiment or combination regiment (Braybrooke, 2011). Three major trials established paclitaxel-cisplatin combination therapy as the standard regimen in advanced EOC patients, thus this regiment is used in Sanglah General Hospital (Ozols *et al.*, 2000).

BACKGROUND

According to PERMENKES RI NO. 72 in 2016 about Standard of Pharmaceutical Services in Indonesia's Hospitals, a pharmacist is obliged to monitor the effectiveness and safety of the given chemotherapy to the patients through mixing cytostatic compound and accurate dosage calculation according to chemotherapy protocol (Direktorat Jenderal Bina Farmasi, 2016)

The effectiveness and side effects of paclitaxel-cisplatin chemotherapy are assessed from the treatment's progress and toxicity level. The objective is to evaluate the two criteria through CA 125, BUN, and creatinine serum in patients to overcome data limitation at Sanglah General Hospital.

MATERIALS AND METHODS

MATERIALS

Patient's medical records from January 2017 to May 2018. All data was collected on data collecting form and recapitulated on data recapitulation form. A computer with SPSS software was needed in the research.

METHODS

- This was an observational retrospective research located in Sanglah General Hospital, Denpasar, Bali and conducted from January to March 2018 and selected with consecutive sampling.
- The research was commenced after getting approval from the Litbang Ethical Commission of Medicine Faculty/Sanglah General Hospital, Denpasar [Ethical Clearance number: 87/UN.14.2/KEP/2017].
- The inclusion criteria was stadium I-IV EOC patients who consent for their CA 125, BUN, and creatinine serum data to be collected.
- The exclusion criteria was patients with renal dysfunction before chemotherapy started. All data collected on data collecting form to be recapitulated and analyzed afterwards.

DATA ANALYSIS

- The recapitulated data analysed statistically with SPSS.
- Data underwent normality test with Shapiro-Wilk, data with normal distribution were analysed with t-test dependent.
- Data with abnormal distribution were later analysed with Wilcoxon test with 95% confidence level (* $p=0.05$).

RESULTS AND DISCUSSION

	Characteristics	Number (N=3)	Percentage (%)
Age	20-40	1	25
	41-60	2	75
Educational Level	No formal education	2	75
	Elementary School	1	25
Occupational Status	Farmer	1	33,3
	Employee	1	33,3
	Unemployed	1	33,3
Marital Status	Married	1	25
	Single	2	75
Cancer Classification	Serous	2	75
	Mucinous	1	25
Cancer Stadium	I	1	25
	III	2	75

- Ovarian cancer risk is increasing highly after the age of 40 years old and will have its peak at 50-60 years (Arania and Indri, 2015).
- The low educational level of the samples show that education and information about ovarian cancer is highly needed since adolescence (Rachmani *et al.*, 2012).
- One of three samples were married and having more than one children, meanwhile the rest were single and had no child. Patients who haven't had a child have a higher risk of developing ovarian cancer (Permeth-Wey and Sellers, 2009).
- One of three samples was diagnosed with first stage of ovarian cancer and the rest was diagnosed with third stage of ovarian cancer. This showed that patients were most likely diagnosed in higher stadium.

WILCOXON TEST RESULT OF CA 125 BEFORE THE FIRST CHEMOTHERAPY AND AFTER THE SIXTH CYCLE OF CHEMOTHERAPY

	N	CA 125		P
		Mean	SD	
Before first cycle	3	9429,6	15978,74066	0,109
After sixth cycle	3	31,6467	36,06815	

- According to the table above, there was no meaningful difference of CA 125 value before the first cycle and after the sixth cycle of chemotherapy with p* value > 0,05
- CA 125 value for normal individual is < 35U/ml (Agarwal and Kehoe, 2010). The mean value of CA 125 before the first cycle was 9429,6 U/ml, meanwhile the value of CA 125 after the sixth cycle of chemotherapy was 31,65 U/ml.
- The reduction of CA 125 value to the normal range showed that paclitaxel-cisplatin chemotherapy contributed to a good therapy respond to ovarian cancer patients in Sanglah General Hospital.
- Another research with 223 patients included stated that there was reduction of CA 125 value to the normal range after the first cycle of paclitaxel-cisplatin chemotherapy and normalization of CA 125 levels within three cycle of chemotherapy (Lee *et al.*, 2016).
- The reduction of CA 125 value compared to the previous cycle of chemotherapy indicates a good treatment response, whereas elevated CA 125 value indicates the possibility of chemo-resistance and another therapeutic regiment needed to replace the ongoing regiment (Agarwal and Kehoe, 2010).

T-TEST DEPENDENT RESULT OF BUN VALUES BEFORE THE FIRST CYCLE AND AFTER THE SIXTH CYCLE OF CHEMOTHERAPY

	N	Mean	BUN	SD	P
Before the First Cycle	3	10,6333		2,94845	
After the Sixth Cycle	3	14,8333		7,17658	0,315

- The result showed that there was no meaningful difference of BUN values before the first cycle and after the sixth cycle of chemotherapy ($p > 0,05$)
- However, there was an elevation of BUN values before the first and after the sixth cycle of chemotherapy clinically, yet still in normal range of BUN value (6-20 mg/dl)(Duong and Jin-Yew, 2006). The mean value before the first chemotherapy is 10,63 mg/dl and the mean value after the sixth cycle is 14,83 mg/dl. The increase value of BUN after samples complete their chemotherapy showed that paclitaxel-cisplatin gave a side effect to renal function
- Paclitaxel is more likely leads to peripheral neuropathy and hematological side effects such as neutropenia and leukopenia (Lawrenti, 2013). Meanwhile, cisplatin is more dominant in causing renal side effects
- BUN values are not fully determined by patient's renal function. There were several factors affects, such as patient's protein intake, muscles injury, tissues necrosis and liver function (Duong and Jin-Yew, 2006).

T-TEST DEPENDENT RESULT OF CREATININE SERUM BEFORE THE FIRST AND AFTER THE SIXTH CYCLE OF CHEMOTHERAPY

	N	Creatinine Serum		P
		Mean	SD	
Before First Cycle	3	0,6933	0,09292	0,417
After Sixth Cycle	3	0,7767	0,20526	

- The result showed that there was no meaningful difference of creatinine serum values before the first cycle and after the sixth cycle of chemotherapy ($p > 0,05$)
- There was an elevating value of creatinine serum after the sixth cycle of chemotherapy clinically, yet still in normal range of creatinine serum value (0,6-1,3mg/dl)(Duong and Jin-Yew, 2006).
- The increase value of creatinine serum showed that paclitaxel-cisplatin gave renal side effect to the patients completing their chemotherapy. Compared to another platinum-based agent such as carboplatin, cisplatin has higher nephrotoxic effect caused by the less selectiveness of cisplatin to tumor cells. Besides, carboplatin is a derivative of cisplatin, thus carboplatin is more stable but has equivalent activity to some kind of cancer compared to cisplatin (Anderson *et al.*, 2002).

CONCLUSION

There were differences of CA 125, BUN and creatinine serum before the first and after the sixth cycles. There were a decrease a value of CA 125 and elevating value for BUN and creatinine serum after the sixth cycles of chemotherapy

THANK YOU

