

## INTERNATIONAL CONFERENCE ON SUSTAINABLE NATURAL PRODUCTS IN HEALTHCARE "INTERDISCIPLINARY APPROACHES FROM LAB. TO CLINICAL BREAKTHROUGHS"

 Date  
June 13, 2025 Time  
08:00 AM - onward Location  
The Alana Hotel & Convention Center, Yogyakarta

Subject area:  
Public Health and  
Clinical Science

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### Role of Glucocorticoids Induced Hyperglycemia in Rheumatoid Arthritis Patients: Pharmacovigilance Study

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Incidence of hyperglycaemia as an adverse effect is highest following glucocorticoid use in rheumatoid arthritis patients. It has potential to elevate the risk of comorbidities, length of stay, and severity of the disease. Analysing the causes of adverse effects is challenging due to the scarcity of adverse effect monitoring data. Objective study to determine the impact and correlation of glucocorticoid administration that induced hyperglycaemia. Study design used retrospective cross-sectional study. The population is RSUP Dr. Kariadi patients aged >18 years with rheumatoid arthritis disease without DM comorbidity who received glucocorticoid and blood glucose examination. The data were statistically analyzed using chi-square to determine impact to incidence adverse effect hyperglycemia and logistic regression analysis to determine correlation with adverse effect. The clinical data of 97 patients between 2023-2024, 47 patients with hyperglycemia and 50 without hyperglycemia. Types of glucocorticoids ( $p=0.032$ ), duration ( $p=0.006$ ) and route administration ( $p=0.000$ ) are significantly impacted to the incidence of adverse effect hyperglycemia. The route of administration showed the most correlation with glucocorticoid induced hyperglycemia in rheumatoid arthritis patients (OR 1.052; 95% CI 0.499-2.217). Collaborative effort between physicians and pharmacists needs to monitor and reduce the incidence of hyperglycemia.

**Keywords:** glucocorticoid; adverse effect; hyperglycemia; rheumatoid arthritis, pharmacovigilance



# ROLE OF GLUCOCORTICOIDS INDUCED HYPERGLYCAEMIA IN RHEUMATOID ARTHRITIS PATIENTS: PHARMACOVIGILANCE STUDY

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## BACKGROUND

Glucocorticoids are long-term anti-inflammatory medications utilized in patients with rheumatoid arthritis [2].

**High incidence of adverse effects:** hyperglycaemias as an adverse effect is highest following glucocorticoid use. It has potential to elevate the risk of comorbidities, length of stay, and severity of the disease [1-4].

**Delayed reporting in developing countries:** Analysing the causes of adverse effects is challenging due to the scarcity of adverse effect monitoring data [4].

**Aim of study :** This study evaluated the impact and correlation of glucocorticoid administration that induced hyperglycaemia.

## METHOD

**Study design:** retrospective cross-sectional study.

**Location :** Kariadi General Hospital, Semarang, Indonesia

**Inclusion criteria :**

- Patients aged >18 years with rheumatoid arthritis disease
- Receiving glucocorticoid and blood glucose examination.

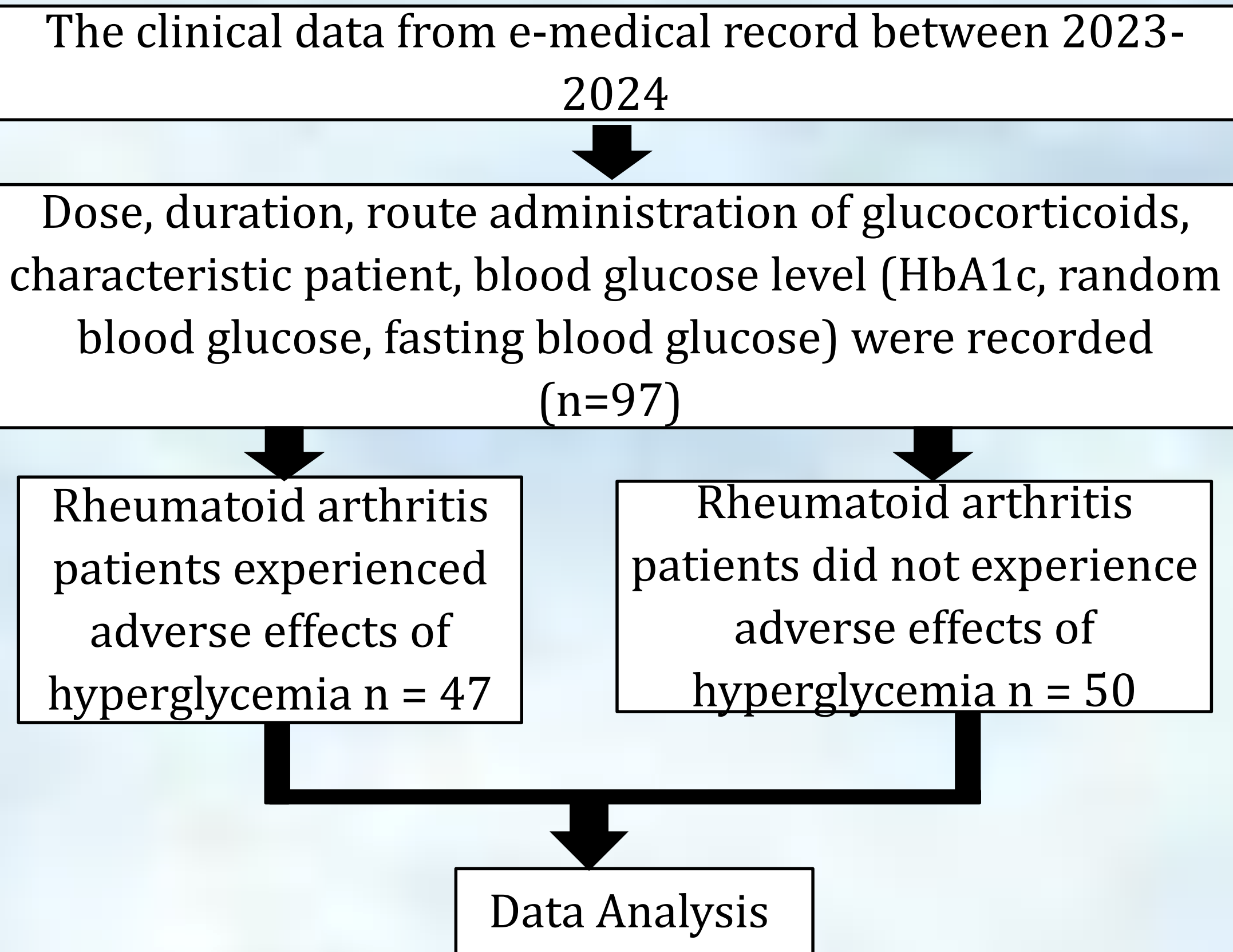
**Exclusion criteria :**

- DM comorbidity and pregnancy

**Data Analysis**

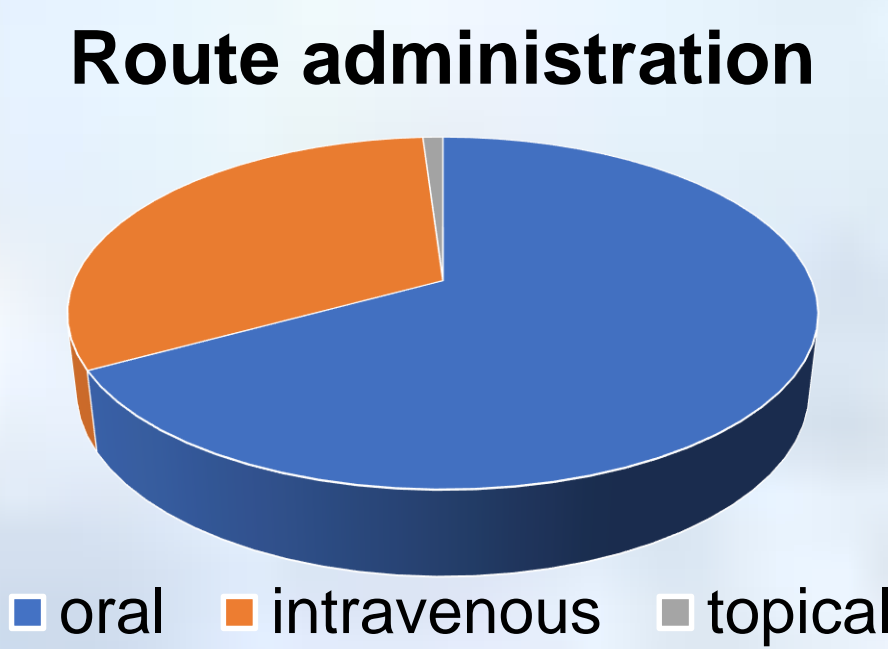
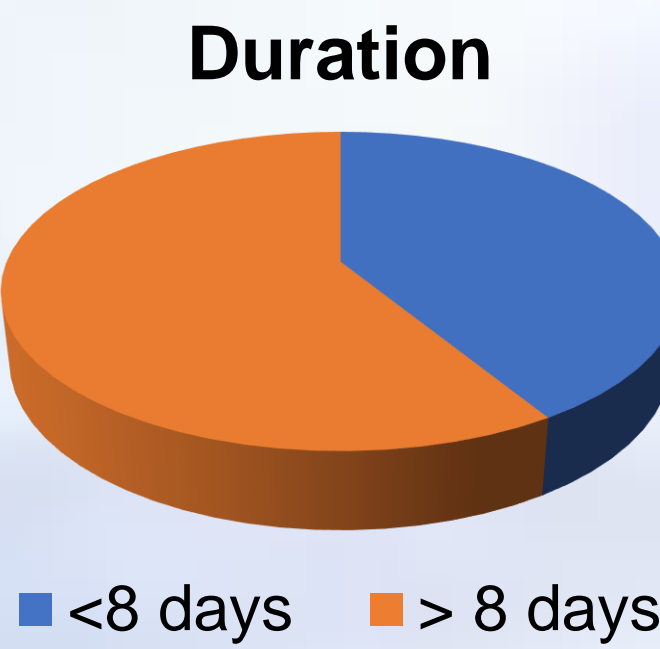
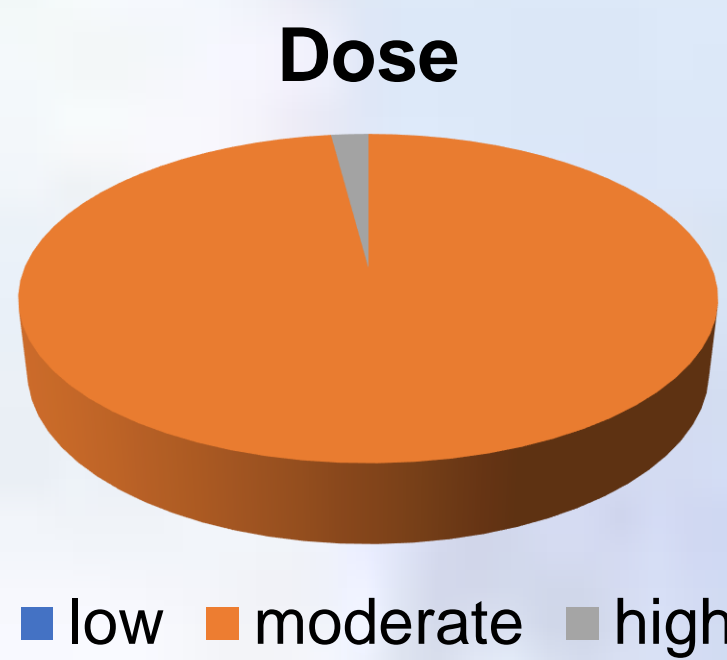
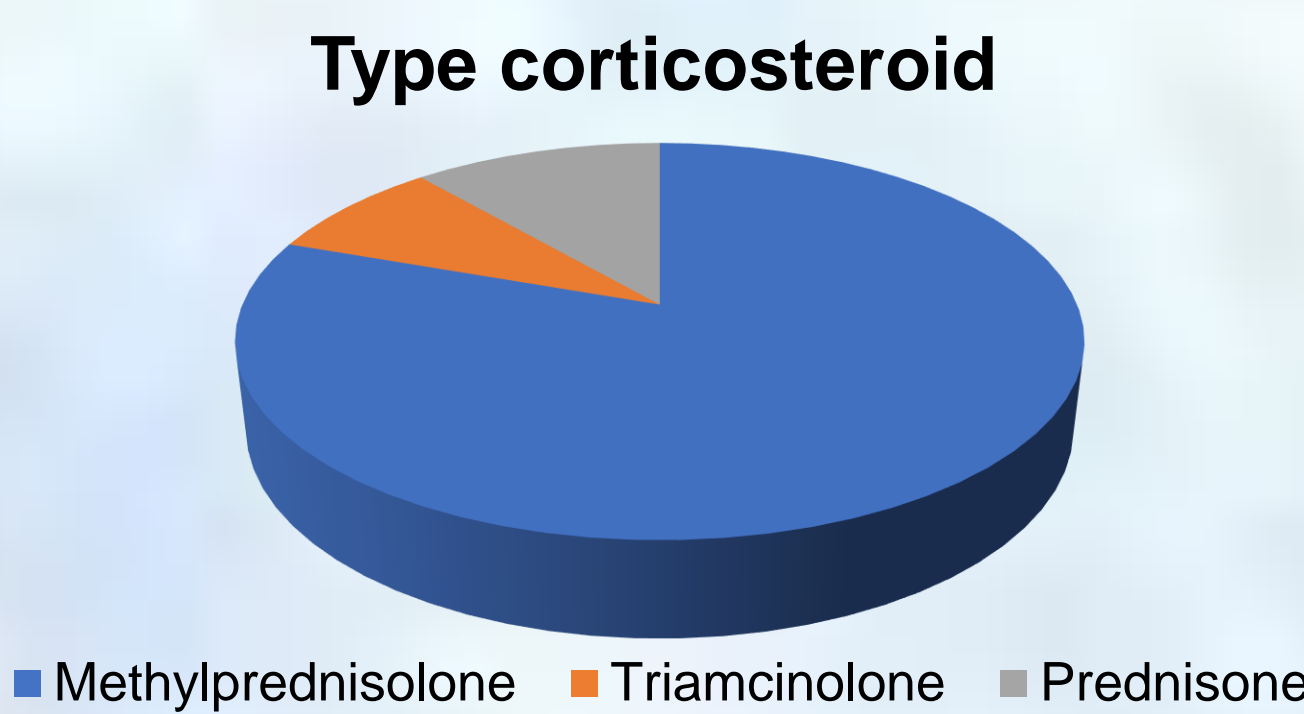
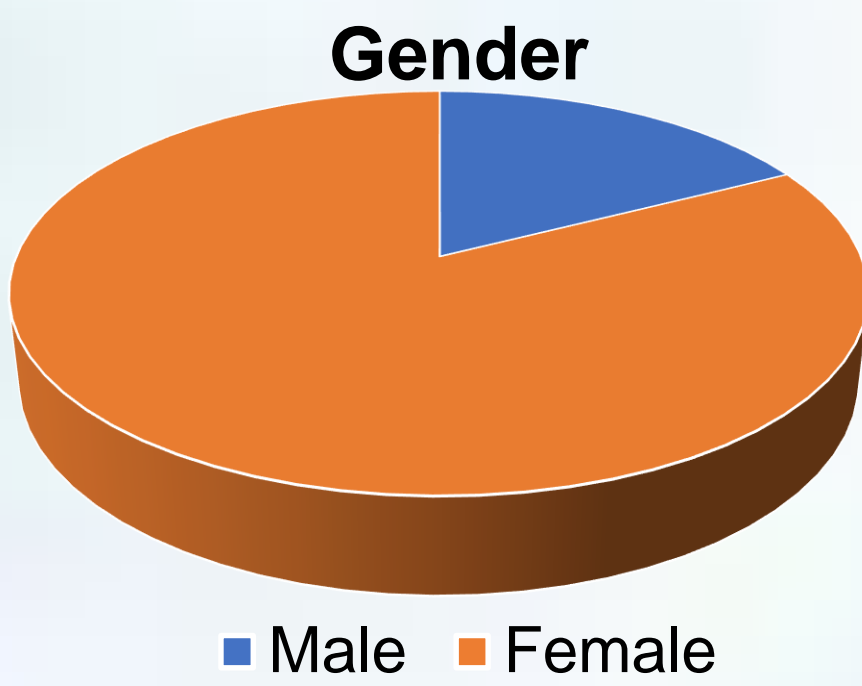
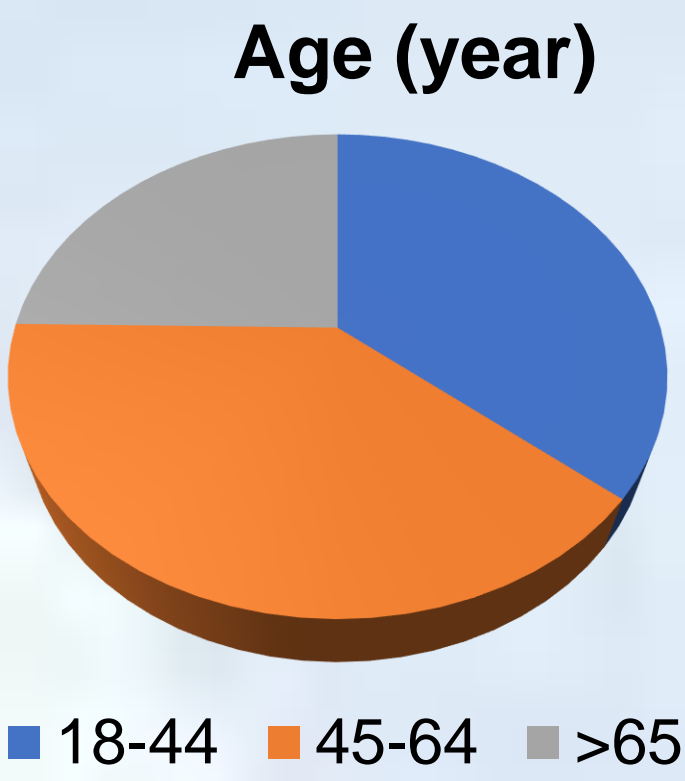
- Statistically analyzed using chi-square if  $p < 0.05$ , it had impact to incidence adverse effect hyperglycemia
- Logistic regression analysis to determine the most correlation with adverse effect

### Data Collection

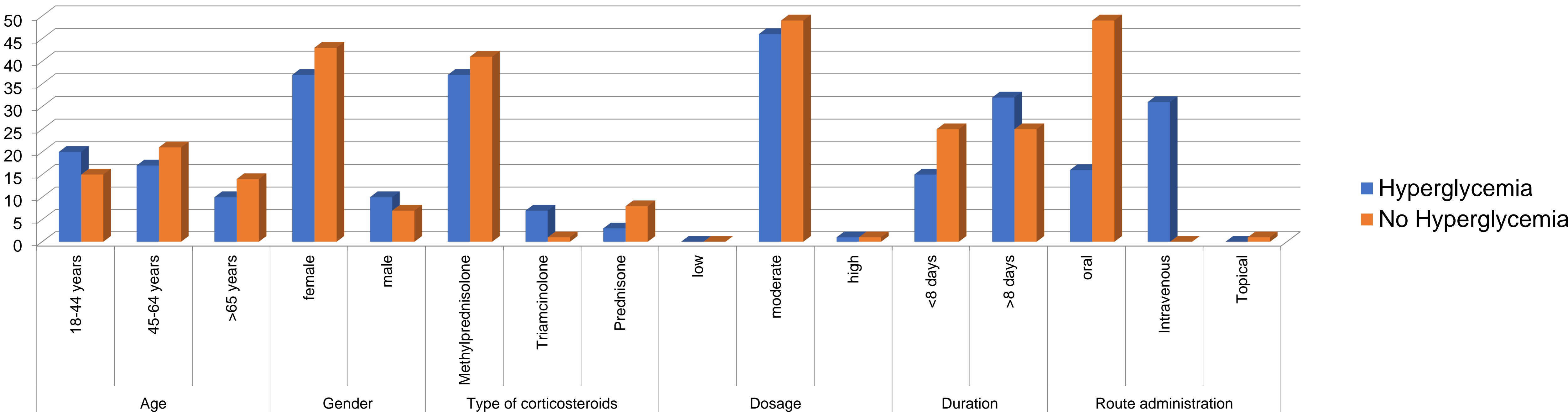


## RESULT AND DISCUSSION

### Patient characteristics



### Role Glucocorticoids Induced Hyperglycemia



### Correlation Glucocorticoid Use with Hyperglycemia

Independent Variable	P	OR	95%CI	
			Lower	Upper
Types of glucocorticoids	0.895	0.024	0.005	0.112
Duration	0.131	0.431	0.144	1.287
Route of administration	0.000*	1.052	0.499	2.217

## CONCLUSION

The route of administration (intravenous) showed the most correlation with glucocorticoid induced hyperglycemia in rheumatoid arthritis patients (OR 1.052; 95% CI 0.499-2.217).

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## DISCUSSION

The clinical data of 97 patients between 2023-2024, 47 patients with hyperglycemia and 50 without hyperglycemia. In this research, types of glucocorticoids (methylprednisolone) had a significant difference ( $p=0.032$ ). Duration of glucocorticoids (more than 8 days) had a significant difference ( $p=0,006$ ). Route administration of glucocorticoids (intravenous) had a significant difference ( $p=0,000$ ). It means intravenous injection of methylprednisolone significantly impacted to the incidence of adverse effect hyperglycemia if used more than 8 days.

## REFERENCES

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