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Research Article

**INCIDENCE OF ARTHRITIS, PHYSICAL HEALTH,
REDUCTION OF DISEASE INDICATIONS AND ITS
ASSOCIATION WITH INTRAVENOUS DEXAMETHASONE
SIGNIFICANCE**¹Dr. Zagham Hammad, ²Dr. Yasir Umar Khawaja, ³Dr. Maria Fatima¹Medical Officer, District Headquarter Hospital Nankana Sahib²Social Security Hospital, Gujrat³RHC Hujra**Abstract:**

Objective: Metabolic and physiological diseases are caused by infected arthritis that is a joint infection, which can further result into severe harm if it is not treated in time. The recovery procedure of illness and the outcomes of intravenous dexamethasone have been examined in our study.

Methods: Our research was carried out on the patients of Services Hospital, Lahore in the time span of November, 2016 to September, 2017. A number of total 60 effected persons were divided in two groups having same number of patients in each group, research was by design a non-randomized trial held in a blind medical experimental setup. Group 1 was given a (0.15 mg per kilogram per QD) Dexamethasone dose; whereas, Group "2" was provided with the same amount of normal saline for 4 days after diagnosis of infected arthritis. Later on, for the cure of disease patients were examined for inflammation, soreness, joint working and (CRP) and (ESR) levels.

Result: Data gathering was carried out after the comparison with (ANOVA, t test, X2 test, and Mann Whitney statistical test). For the data analysis SPSS Software was used. It was found that the duration of the treatment remained (3.28 ± 1.05) days and the joint movement was (50.68 ± 9.8) degree. The inflammation relief was observed after (4.2 ± 0.33) days, ESR level was found with a reduction of (19.4 ± 2.90) and a fall in CRP level indicated a noticeable difference ($P < 0.05$).

Conclusion: Intravenous Dexamethasone can enhance retrieval to daily normal physical health and it can reduce the medical indications of illness of the patients with infected arthritis with daily antibiotic therapy.

Key Words: Dexamethasone, Septic Arthritis and Inflammation.

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INTRODUCTION:

When a pathogen attacks a joint producing micro organismic (metabolic and physiological disorder), there is need for instant diagnosis and treatment because it can bring septic arthritis which can result into infection of the joints. It is severe and incapacitating injuries and after growth stages can lead to 24% disabilities, which may consist bone malformations, restricted motion, and dislocation. Its appearance can take a long time after the occurrence of illness [1 – 5].

In this illness *Staphylococcus Aureus* is the most usual pathogen and a very noteworthy inflammation providing organism. The inflammatory process remains continuous and provides interruption in recovery even though the microorganisms are deteriorated with the help of antibiotics. A higher rate of concentration of inflammatory cytokines can be observed in infected arthritis and several research studies it is larger rate of two cytokines in serum is observed including (IL – 1 & TNF = α) in association with clearly increasing intensity of infected arthritis in kids [1, 6 – 8]. Dexamethasone is also an anti-inflammatory drug and adrenocortical steroid, and its residing effects on enzymes and prostaglandins growth can increase or reduce inflammation. It is observed in the patients with infected arthritis, that Intravenous arrangement of Dexamethasone with antibiotics, can cause anti-inflammatory properties and reduces disorders and intensity of the illness, this result has been observed in many research studies [3 – 9]. We hardly found the role of medicines, operational procedures, treatment strategies of this illness, and the information about the significance of infected arthritis, its prevalence and harmful role. So, in our study, we have tried to express evaluated effects of dexamethasone arrangements and its remedial strategies in kids.

METHODS:

Our research was carried out on the patients of Services Hospital, Lahore in the time span of November, 2016 to September, 2017. Through (double-blind random medical experiment), an informed consent was provided to All parent's patients and approval of ethical board was obtained. The participation criteria encompassed confirmed infected arthritis, age above seven months and

informed agreement by parents. On opposite, the criterion for exclusion was comprising over immunodeficiency known as Leukemia, simultaneous infected illness, use of antibiotics before culture, usage of corticosteroids, and a Systematic inflammatory illness rheumatoid arthritis.

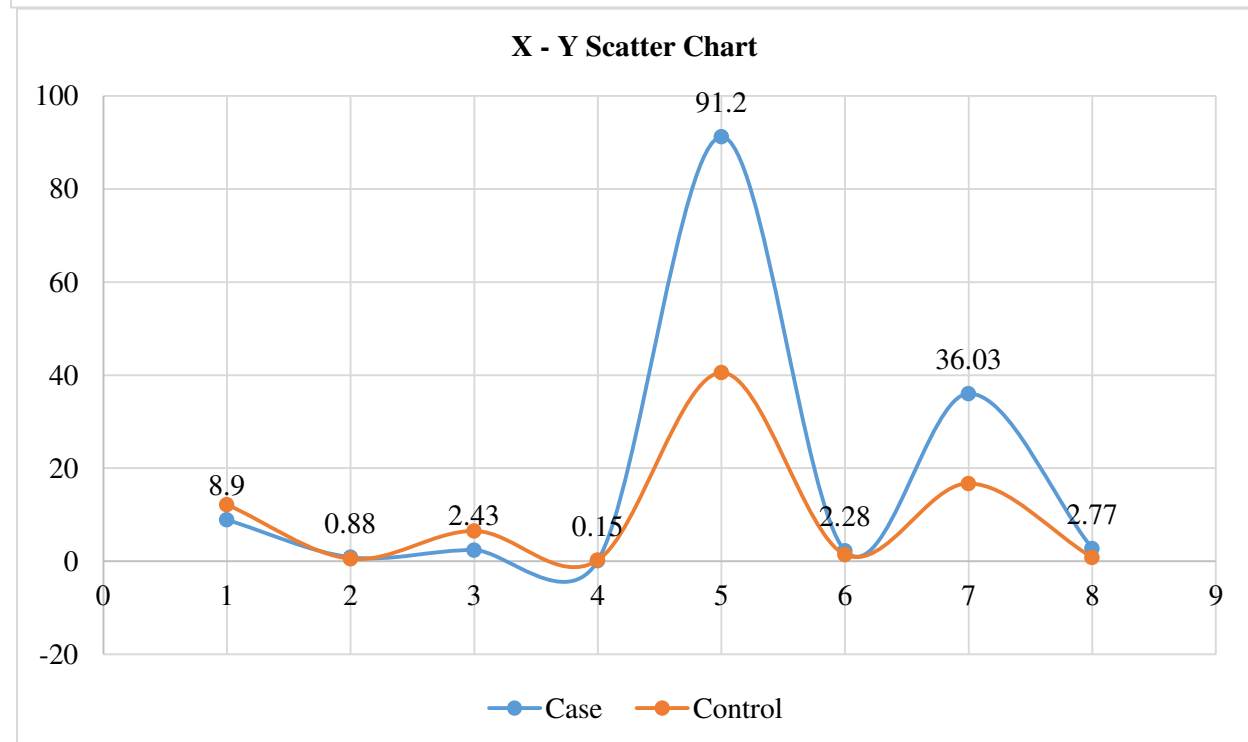
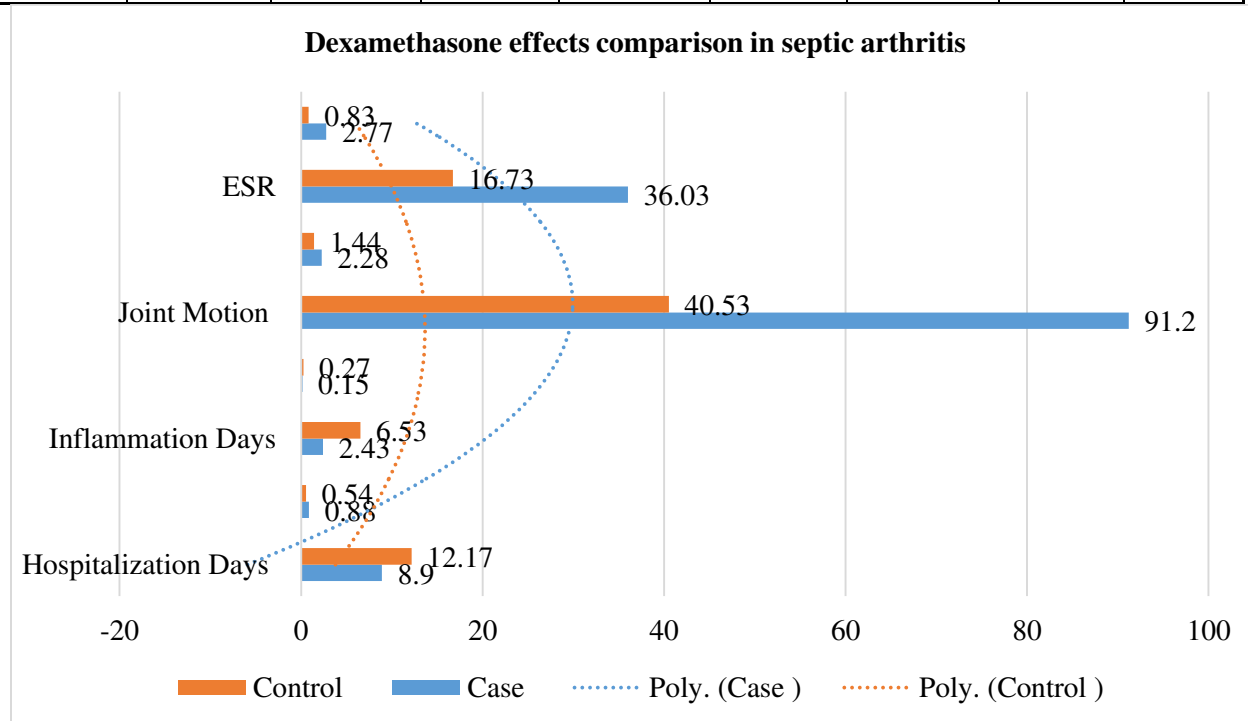
A sample of blood and joint fluid was sent for culture among each patient and before sampling the patients were divided into 2 groups, each group containing (30) patients. For the drainage of affected joints, properly scheduled medication and surgery was provided to the patient for 3 weeks. Dexamethasone (0.15 mg / kg / QD) In Group1 was arranged for 4 days and with the same quantity of normal saline was arranged in Group 2. Comparison between the groups was made upon medical and laboratory conclusions. In clinical conclusions the focus was upon affected joint motion extent and therapy duration. In laboratory outcomes, levels of ESR & CRP were included, inflammation was also added. Data analyzation was carried out and parents were followed up after the treatment which was considered apparent through ANOVA, X^2 test, Mann Whitney test and t test with SPSS ($P < 0.05$)

RESULTS:

Group "1" included participants having average age value (8.06 ± 0.5) years in which male patients were 73% and female were 27%. Group 2 was comprising over participants having average age (8 ± 6 years) which included 70% male participants and 30% female participants. Both groups were having little difference in mean age ($P > 0.5$). After arrangements of Dexamethasone, the number of inflammation in Group 1, found (2.44 ± 0.16) days, and in Group 02 was (5.64 ± 0.26) days. These outcomes were found in clinical conclusions of infected arthritis. The total number of hospitalization period in Group 1 was (9.0 ± 0.89) days, and in Group 2 was (12.16 ± 0.54) with significant difference ($P=0.005$). In the disorder, quantity of motion in the Group 1 was (91.3 ± 2.27 degrees) and in Group 2 was (40.54 ± 1.46) degree and the alteration was ($P=0.007$). The Group 1 ESR level was reduced as (36.04 ± 2.76) and in Group 02 as (16.72 ± 0.82) with difference ($P=0.001$) in laboratory conclusions. It was apparently significant that CRP levels were reduced as indicated through tests.

Table: Dexamethasone effects comparison in septic arthritis treatment results as (Means \pm SD)

Group	Hospitalization Days		Inflammation Days		Joint Motion		ESR	
	Mean	\pm SD	Mean	\pm SD	Mean	\pm SD	Mean	\pm SD
Case	8.9	0.88	2.43	0.15	91.2	2.28	36.03	2.77
Control	12.17	0.54	6.53	0.27	40.53	1.44	16.73	0.83



DISCUSSION:

A huge recovery was observed in the results of the study when the dexamethasone was added up to (antibiotic therapy schedules) in patients infected (with arthritis). When we compared both, we found that Group 1 was having less period of local symptoms as compared with the Group 2 and serious phase reactants were suppressed for little periods of time. Usage of Intravenous dexamethasone was found much affective in the treatment of Inflammation of joints during treatment days and the (CRP) and (ESR) values were reduced. It was also observed that due to the aforesaid interference an improvement took place in joints function as the result of treatment.

There were some drawbacks of our study such as absence of measuring quantities of inflammatory cytokines and Metalloproteinase in (Synovial fluid) and non-usage of CRP factor as a measureable variable. It was also observed that Pathogenic processes and Bacterial attack on the joint cartilage was effected by the metabolism of these factors [10]. Due to limited patients, the study could not display a helpful effect of dexamethasone in remedial period of infected arthritis and the prognosis to different strains was equal.

The lack of symptoms in successive intervals after the treatment also developed consequences showing the impossibility to evaluate durable effects (of dexamethasone) on long term projection of infected arthritis [9 – 10]. We found CRP levels of serum rapidly decreased in patients experiencing (dexamethasone) therapy. The measurements of this serum are valuable predictive catalogue for detection of reaction to the remedial strategies. Rapid fall of IL-6 cytokines indicates that, the (IL-6) cytokine which is also responsible for (CRP) elevation, acts along with (IL 1), (TNF alpha and beta), as these cytokines were also found decreased with the usage of (Dexamethasone). Many studies in this perspective were held on animals as in 1996. The observations were made on the consequences of corticosteroids in the (antibiotic) therapy, on the intensity of infected arthritis, resultant from (Staphylococcus Aureus) in mice when this protocol lessened the intensity and morality due to the illness [10 – 11]. The defensive effect of corticosteroids on cartilage was displayed by two studies in infected arthritis in rabbits, provided with the well in time and scheduled use of structured antibiotics. The studies were performed on humans with septic arthritis in 2004. In experiments including 123 children, timely use of (Dexamethasone) led to curative period. The decrease observed in bacterial infected arthritis disorder was (27%) at the end of the

remedial duration. It was found closer to other studies as it was (24%). Moreover, in another study it was observed that, in this case the experiments on human including 49 kids (infected with arthritis) the days of infection were (2.44 ± 0.14) and the total treatment days were (9.9 ± 0.87) in (Group 1). By comparing these limitations, with the other group assessed in this study were (5.6 ± 6.6) and (9.92 ± 4.84) days [11].

It is observed that intravenous arrangements of (Dexamethasone) in addition with (antibiotics) in effected persons with infected arthritis enhances the healing and brings quick healing, in period of remedy and an improved prognosis.

CONCLUSION:

Intravenous Dexamethasone can enhance retrieval to daily normal physical health and it can reduce the medical indications of illness of the patients with infected arthritis with daily antibiotic therapy.

REFERENCES:

1. Bolaños-Azofeifa P, Alvarado-Salazar M. Septic Arthritis (Sa) In Costa Rican Children (Ch). Brussels Belgium June 2009;9-13.
2. Howard JB, Highgenboten CL, Nelson JD. Residual Effects of Septic Arthritis in Infancy and Childhood. JAMA.1976;23:236(8):932-935.
3. Sakiniene E, Bremell T, Tarkowski A. Addition of Corticosteroids to Antibiotic Treatment Ameliorates the Course of Experimental Staphylococcus Aureus Arthritis. Arthritis Rheum. 1996;39(9):1596-1605.
4. Sáez-Llorens X. Molecular Pathophysiology of Bacterial Meningitis: Current Concepts and Therapeutic Implications. J Pediatr. 1990;116(5):671-684.
5. Odio C, Ramirez T, Arias G. Double Blind Randomized Placebo-Controlled Study of Dexamethasone Therapy for Hematogenous Septic Arthritis in Children. J Pediatr Infect Dis. 2003; 22:883-888.
6. Harel L, Prais D, Bar-on E. Dexamethasone Therapy for Septic Arthritis in Children. J Pediatr Orthop. 2011;31(2):211-216. doi:10.1097/BPO.0b013e3182092869.
7. Sáez-Llorens X, Mustafa MM, Ramilo O, Fink C, Beutler B, Nelson JD. Tumor Necrosis Factor Alpha and Interleukin 1 Betain Synovial Fluid of 20 Infants and Children with Supportive Arthritis. Am J Dis Child. 1990;144(3):353-356.
8. Faust SN, Clark J, Pallett A. Managing Bone and Joint Infection in Children. Arch Dis Child. 2012;97(6):545-553. doi: 10.1136/archdischild-2011-301089.
9. Odio CM. Double Blind, Randomized, Placebo-

- Controlled Study of Dexamethasone Therapy for Hematogenous Septic Arthritis in Children. *Pediatr Infect Dis J.* 2003;22(10):883-888.
10. Givon U, Ganel A. Treatment of Early Septic Arthritis of the Hip in Children: Comparison of Results of Open Arthrotomy versus Arthroscopic Drainage. *J Child Orthop.* 2008;2(6): 499.doi: 10.1007/s11832-008-0138-5.
 11. Sáez-Llorens X. Tumor Necrosis Factor Alpha and Interleukin 1Beta in Synovial Fluid of Infants and Children with Suppurative Arthritis. *Am J Dis Child.* 1990;144(3):353-356.