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Tek sağlık kavramı farklı disiplinlerin sağlığı korunması ve geliştirilmesi için bir araya gelmesini, ortak bir çatı altında çalışmasını hedefleyen bir kavramdır. Tek sağlık fikrinin Karl Virchow tarafından ilk defa ortaya atılmasının üzerinden yaklaşık 150 yıl geçmiş olmasına karşın, 2000 li yıllarla hızla globalleşen dünya ile önemi ve gerekliliğini daha net anladık. Özellikle on birkaç yıl içinde yaşadığımız pandemi deneyimi tek sağlık anlayışının ne kadar hayati olabileceğini de deneyimlerle bize ispat etti. Tek sağlık şemsiyesi hekimler, veteriner hekimler, çevre sağlığı ile uğraşan uzmanlar başta olma üzere sağlık kavramı ile ilişkili olan herkesi içine almaktadır.

Bugün birbirinden güzel 5 makale ile ilk sayısını sizlerle buluşturacağımız Journal of One Health Research Dergisi de tek sağlık ilkeleri doğrultusunda ülkemizde birçok disiplinin bir araya gelmesi için önemli bir platform oluşturacağına inanıyoruz.

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Original Article

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Investigation of some microbial and protozoon factors with rapid test kits in neonatal diarrheas in calves in Kars province

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ABSTRACT

Objective: The aim of this study is to investigate some microbial and protozoon agents with rapid test kits in neonatal diarrhea in calves in Kars region.

Material and method: Feces samples were collected from 100 neonatal calves (0-28 days old) with diarrhea, which were brought to the private veterinary clinics / polyclinics serving in the center of Kars, and these samples were analyzed for Escherichia coli, Rotavirus, Corona virus, Giardia spp, and Cryptosporidium spp. In order to detect the presence of these agents, a mixed Bovid 5 AG (Bionote, Republic of Korea) rapid test kit containing specific rotavirus, coronavirus, E.coli, cryptosporidium, giardiaagents was used.

Results: The prevalance of Escherichia coli, Rotavirus, Corona Virus, Giardia spp, and Cryptosporidium spp were respectively were observed in 15 (15 %), 14 (14 %), 29 (29 %), 12 (12%) and 4 (4 %). The frequency of mixed infections was determined at a rate of 26%. The composition of these mixed infections as formed as E.coli+corona virus (%5); E.coli + rotavirus (%4); E.coli + cryptosporidium (%2); rotavirus + corona virus (%6); rota virus + cryptosporidium (%3); corona virus + crypto sporidium + giardia (%2); E.coli + cryptosporidium + giardia; rotavirus + coronavirus + cryptosporidium (%1) and rotavirus + cryptosporidium + giardia (%1).

Conclusion: When the results are evaluated in general; E.coli was the most common infectious agent obtained with rapid diagnostic kits in neonatal calf diarrhea, followed by rotavirus, corona virus and mixed infections. It was concluded that in the treatment of neonatal diarrhea and preventive medicine services in the Kars province which causes significant losses in terms of the country's

INTRODUCTION

Newborn calf diarrhea is one of the most important diseases in cattle breeding in the world and in our country. Newborn calf diarrhea as bovine rotavirus (BRV), bovine corona virus (BCoV), bovine viral diarrhea virus (BVDV), Salmonella spp. (Salmonella), Escheria coli (E. coli) K99+, Clostridium perfringens (C. perfringens) type C and Cryptosporidium parvum (C. parvum) as well as environmental conditions, care- nutrition deficiencies and non-development of passive immunity are predisposing factors. These predisposing factors and infections etiologized by pathogenic agents cause remarkable economic losses due to growth retardation and high mortality.[1,2]

Disease-causing agents may cause neonatal calf diarrhea alone, or mixed infections may occur with the participation of more than one infectious agent.[3] The prevalence of infection by diarrhea-causing pathogens and the incidence of the disease differ according to herd management, region to region, and preventive medicine services.[4,5] The aim of this study was to reveal the causes and the prevalance of enteropathogenic agents in newborn calves with diarrhea complaints using ready-made test kits in Kars region.

METHOD

Fecal samples collected from newborn calves (0-28 days old) brought to private veterinary clinics/policlinics serving in the center of Kars were studied. In clinical examination, feces samples were collected from calves whose diarrhea, weakness, anorexia, dehydration and cases requiring treatment were evaluated within the scope of neonatal diarrhea for more than 8-10 hours. Feces samples taken from the calves included in the study were tested for Escherichia coli, Rota Virus, Corona Virus, Giardia spp. and Cryptosporidium spp. by using the specific mixed Bovid 5 AG (Bionote®, Republic of Korea) rapid test kit.

A total of 100 calves within the scope of the study were performed on those who had diarrhea in the neonatal period and required treatment. Calves with diarrhea were evaluated as single and mixed infections detected from feces samples using rapid diagnosis kits.

RESULTS

The etiology of infections were Rota virus (%15.0; n=15), Coronavirus (%13.0; n=13), E.coli (%29.0; n=29), Cryptosporidium Spp (%12.0; n=12), Giardia infections (%4.0; n=4). It was seen that the frequency of mixed infection was %26.0 (n=26). If the composition of mixed infection was evaluated most frequent mixed infection was Rota virus + Corona virus (%6.0; n=6). The frequencies of other mixed infections was summarized in table 1.

DISCUSSION

Detection of pathogenic agents causing neonatal calf diarrhea in a short time using rapid diagnosis kits will contribute to the establishment of a treatment protocol. Treating with this diagnosis will prevent calf deaths and reduce economical losses.[6-10] Diagnosis of these enteropathogens is realised in more detail in laboratories that require equipment, but the use of rapid diagnosis kits provides benefits in practical diagnosis. With the etiological diagnosis, the disease-specific treatment and prognosis evaluation can prevent calf deaths and unnecessary drug use in therapy. In this way, diagnosis of enteropathogens in feces with ready-made diagnostic kits immune- chromatographically provides advantages compared to other diagnostic methods, providing fast results, cheap, simple and easy applicability, and determination of the treatment protocol in a short time. [8,9,11,12]

In our study, only five infectious agents requiring treatment in the Kars region were investigated. In our study, it was studied on calves diagnosed with ready-made diagnostic kits, and as a result of the analysis of feces samples of a total of 100 neonatal calves with diarrhea; 15% only rotavirus, 14% only coronavirus, 29% only E.coli, 12% only cryptosporidium, 4% only giardia agents were detected. Mixed infection was found in 26%. These microbial agents that come together and cause infection, 5% E.coli with coronavirus, 4% E.coli with rotavirus, 2% E.coli with cryptosporidium, 6% rotavirus with coronavirus, 3% rotavirus with cryptosporidium, 2% coronavirus with cryptosporidium with giardia. , 1% E.coli, cryptosporidium and giardia, 1% rotavirus, corona

Table 1: Frequencies and percentages of enteropathogens detected in feces using rapid diagnostic kits.

Patogens	(n=100)	(%)
Rotavirus	15	**15**
Coronavirus	14	**14**
E.coli	29	**29**
Cryptosporidium	12	**12**
Giardia	4	**4**
E.coli+Coronavirus	5	**5**
E.coli+Rotavirus	4	**4**
E.coli+Cryptosporidium	2	**2**
Rotavirus+Coronavirus	6	**6**
Rotavirus+Cryprosporidium	3	**3**
Coronavirus+Cryprosporidium	2	**2**
E.coli+Giardia+Cryprosporidium	1	**1**
Rotavirus+Coronavirus+Cryprosporidium	1	**1**
Rotavirus+Giardia+Cryprosporidium	**2**	**2**

virus and and cryptosporidium, 2% Rotavirus, cryptosporidium and giardia. In the neonatal period, E.coli infection causes osmotic diarrhea in calves, especially on days 1-7. [13] In the studies carried out; Al et al., determined the frequency of E Coli K99 as 17% and Ok et al %13.4 in calves with diarrhea by ELISA. [8,14] Moreover Kaya et and Coşkun (2018) found E Coli K99 frequency as 7.4% in Tokat and Aydın et al. found 69.3% in Kars in 2001. [15,16] We think that the reason why the results of our study differ from those of these studies may be due to the fact that only E.coli K 99 strain was examined and the differences in herd management.

Rota viruses generally cause diarrhea in calves 1-19 days old. [12] The variability of newborns' gastrointestinal pH levels, feeding with milk, and intestinal infections create an ideal environment for rota viruses.[17,18] Per acute diarrhea occurs after an incubation period of 12-24 hours after ingestion of the agent from the contaminated environment.[19] The virus causes maldigestive and/or malabsorbtive diarrhea due to atrophy in the villous cells of the epithelial cells of the small intestines. [4,15,19,20] Eskiizmirliler et al. found rota virus frequency as 25.9 % and Al et al found as 30.0%. [8,21] More over Alkan determined the frequency as 53% and Kaya et al. determined the presence of rotavirus as 44.8%. [15,22] Rota virus was detected in 26.9% of calves with diarrhea in Kars province.[11] In the present study, 15% of rota viruses were detected as the sole factor and 16% in mixed infections, and we think that the difference between this result and other previous studies is due to the regional, farm management and administration.

In the neonatal period, Corona virus can cause diarrhea in 5-30 days. Corona viruses that settle in the large intestine cause a decrease in water resorption by transforming the epithelium in the cubic structure into squamous epithelium. Corona

virus infections also cause loss of appetite, fatigue, persistent yellow diarrhea, severe dehydration and circulatory failure in calves. In the studies carried out; the different frequency of corona virus was determined. Alkan et al determined the frequency as 18%, Al et al. determined as 13%, Altuğ et al. determined as 1.9% and Erdoğan et determined as 1% in calves with diarrhea. [8,9,11,22] Kaya et al. determined the presence of 9.3% of corona virus infection as a mixed infection. [15] In this study, corona virus as a single infection factor was found in 14% and a mixed infection was found in 14%. The presence of corona virus in this study is among the rates found in previous studies. We believe that the difference with the study conducted in Kars is due to the study material and method.

Cryptosporidiosis is a precursor in neonatal calves with low mortality, although the morbidity is high, with afoul-smelling, white-yellowish color or bloody-comfortable diarrhea. As it is known, it can be more severe and lethal in mixed infections [8,15] In different studies it was found between 5.9%- 30.3%.[15,16,2,24] Gündüz et al. determined mAF staining (modified acid resistant) frequency as 5.5% and 7.5% with ELISA in calves with diarrhea. [25] In the current study, it was determined that the frequency of single pathogen was 12% and 10% in mixed infections. When the results are compared, we think that the difference between the values is due to the material and method of the studies.

Giardiasis is a disease that causes weight loss, progresses with chronic diarrhea and can be transmitted through feed and water contaminated with giardia cysts. Giardiasis can be found in the small intestines of calves 12 days to 12 weeks old. The feces of calves with giardiasis were generally yellow-green in color and watery-mucus. Göz et al. foundthe prevalence ofgiardia as 14.7% in diarrhea cases of neonatal calves, while the presence of giardia was found to be 4% in this study. [26]

Reducing calf deaths caused by diarrhea in the neonatal period is very important for sustainable livestock production. In this case, it is suggested that rapid detection of etiological factors contributes to the treatment. [9,27]

CONCLUSION

In conclusion, it was determined that mixed infections with rotavirus and coronavirus played an important role in neonatal calf diarrhea in Kars region, with E.coli being the most common infectious agents examined with rapid diagnosis kits. It has been concluded that this should be taken into account in the treatment of diarrheal calves and preventive medicine services in the Kars Province.

Disclosures

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REFERENCES

1. Burgu I, Akça Y, Alkan F, Özkul A, Karaoglu T. Yenidoğan İshalli Buzağılarda Rotavirusların Electron Microskopi (EM), Enzyme Linked Immunosorbent Assay (ELISA) ve Polyacrylamide Gel Electrophorosis (PAGE) Teknikleri ile Çabuk Teşhisi ve Antijenik Karakterizasyonu. AÜ Vet Fak Derg 1995;42:491-498.

2. Bartels CJ, Holzhauer M, Jorritsma R, Swart WA, Lam TJ. Prevalence, Prediction and Risk Factors of Entero Pathogens in Normal Andnon-Normal Feces Of Young Dutch Dairy Calves. Preventive Veterinary Medicine 2010;93(2-3):162-169.

3. Crouch CF, Oliver SP, Francis MJ. Serological, Colostral and Milk Responses of Cows Vaccinated with A Single Dose of a Combined Vaccine against Rotavirus, Coronavirus and Escherichia Coli F5 (K99). Vet Rec 2001;149:105–108.

4. Cho YI, Yoon KJ. An Overview of Calf Diarrhea - Infectious Etiology, Diagnosis and Intervention. J Vet Sci 2014;15:1–17.

5. Şahal M, Karaer ZY, Duru S, Çizmeci S, Tanyel B.Cryptosporidiosis in New Borncalves in Ankara Region:Clinical, Haematological Findings and Treatment with Lasalocid-NA. Dtsch Tierarztl Wochenschr 2005;112:203- 208.

6. Kalınbacak A.İshalli Buzağıların Sıvı Sağaltımında Hipertonisalin-Dextran ve Oral Elektrolit Solüsyonunun Kullanımı. AÜ Vet Fak Derg 2003;50:113-118.

7. Radostits OM, Gay CC, Hinchcliff KW, Constable PD, editors. Veterinary Medicine, 10th Edition. Edinburgh, London, New York, Oxford, Philadelphia, St Louis, Sydney, Toronto: Saunders Elsevier.2008

8. Al M, Balıkçı E. Neonatal İshalli Buzağılarda Rotavirus, Coronavirus, E. Coli K99 ve Cryptosporidium Prvum'un Hızlı Test Kitleri ile Teşhisi ve Enteropatojen ile Maternal İmmünite İlişkisi. FÜ Sağ Bil Vet Derg 2012;. 26(2):73-78.

9. Altuğ N, Yüksek N, Özkan C, Ağaoğlu IKYBZT, Kaya A, Akgül, Y. Neonatal Buzağı İshallerinin İmmuno Kromotografik Test Kitleri ile Hızlı Etiyolojik Teşhisi . Yüzüncü Yıl Üniv Vet Fak Derg 2013;24 (3):123-128 .

10. Demir PA, Aydın E, Ayvazoğlu C.Estimation of the Economic Losses Related to Calf Mortalitiesin Kars Province, in Turkey. Kafkas Üniv Vet Fak Derg, 2019;25(3):283-290.

11.Erdoğan HM, Ünver A, Güneş V, Çitil M.Frequency of Rota Virus and Coronavirus in Neonatal Calves in Kars District. Kafkas Üniv Vet Fak Derg 2013; 9(1): 65-8.

12.İçen H, Arserim NB, Işık N, Özkan C,Kaya A.Prevalen ce of Four Enteropathogens with immunochromatograp hic Rapid Test in the Feces of Diarrheic Calves in East an d Southeast of Turkey. Pak Vet J 2013;33(4): 496-499.

13.Hermansen GM, Boysen A, Krogh TJ, Nawrocki A, Jelsbak L, Jensen JM. HldE Is Important for Virulence Phenotypes in Enterotoxigenic Escherichia coli. Front Cell Infec Microbiol 2018;8: 253.

14. Ok M, Güler L, Turgut K, Ok U, Sen I, Gündüz K, et al.(2009). The Studies on the Aetiology of Diarrhoea in Neonatal Calves and Determination of Virulence Gene Markers of Escherichia coli Strains by Multiplex PCR. Zoonoses Public Health; 56: 94-101.

15. Kaya U, Çoşkun A. Tokat Bölgesindeki Neonatal Buzağı Ishallerinin Etiyolojisinin Belirlenmesi. Manas J Agr Vet Life Sci 2018; 8(1): 75-80.

16.Aydın F, Umur Ş, Gökçe G, Genç O, Güler MA.Kars Yöresindeki Ishalli Buzağılardan Bakteriyel ve Paraziter Etkenlerin Izolasyonu ve İdentifikasyonu. Kafkas Üniv Vet Fak Derg 2001;7(1):7-14.

17. Dhama K, Chauhan RS, Mahendran M, Malik S.Rotavirus Diarrhea in Bovines and Other Domestic Animals. Vet Res Commun 2009;33(1):1-23

18. Coetzer JAW, Tustin RC. Infectious Diseases of Livestock, 2nd ed., vol. III (pp. 1788–1811). Oxford University Press. 2004

19. Bilal T. Yeni Doğanların İç Hastalıkları.1. baskı İstanbul: İstanbul Üniversitesi Veteriner Fakültesi;2007.p. 158-169.

20. Yanar KE. Yenidoğan Buzağı İshallerinin Nedenleri, Tedavileri ve Korunma Yöntemleri. Palandöken Journal of Animal Science, Technology and Economics 2022; 1(1), 54-59.

21.Eskiizmirliler SN, Öncel T, Beyazıt A, Mısırlıoğlu OZ.Türkiye'nin Değişik Illerindeki Ishalli Buzağılarda Rotavirus, Coronavirus ve Crytosporidiosisin Yayılışı. Vet Hek Mikrobiyal Derg 2001;2: 35-42.

22. Alkan F. Buzağı İshallerinde Rotavirus ve Corona Virusların Rolü. AÜ Vet Fak Derg 1998;45:29-37.

23.Sarı B, Aktaş MS, Arslan MÖ. Erzurum Yöresinde Buzağılarda Cryptosporidium Türlerinin Prevalansı. Türkiye Parazitol Derg 2008;32:116-119

24. Arslan MÖ, Gıcık Y, Erdoğan HM, Sarı B. Prevalence of Cryptosporidium Spp. Ookists In Diarrhoeic Calves In Kars Province, Turkey. Turk JVet Anim. Sci2001;25: 161-164.

25.Gunduz Olmez N, Arslan M. Determining the Prevalence of Cryptosporidium Infections with Acid Fast Staining and ELISA in Calves at the Kars Province of Turkey. Turkiye Parazitol Derg 2017;41(1):5-8.

26.Göz Y, Altuğ N, Yüksek N, Özkan C. Parasites Detected in Neonatal and Young Calves with Diarrhoea. Bull Vet Inst Pulawy 2006;50:345-348

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Role of Lactate Dehydrogenase in COVID-19 pneumonia: a single tertiary care center follow-up experience of 1000 cases in India

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ABSTRACT

Objective: The role of various inflammatory markers has been documented during the evaluation of COVID-19 pneumonia. In the present study, the role of lactate dehydrogenase (LDH) in COVID-19 pneumonia in predicting severity, oxygenation status and confirming response to interventions and final radiological outcome was examined.

Methods: This observational study included 1000 PCR-confirmed COVID-19 cases. All cases were assessed with lung involvement documented and categorized on thorax computer tomography, oxygen saturation, inflammatory marker as LDH at the entry point and follow-up. Age, gender, comorbidity and use of bi-level positive airway pressure/noninvasive ventilation (BPAP/NIV) and outcome as with or without lung fibrosis as per tomography severity were observed.

Results: In the study of 1000 COVID-19 pneumonia cases. Tomography severity score at the entry point has significantly associated with LDH level ($p<0.001$). LDH level has a significant association with the duration of illness and oxygen saturation at the entry point ($p<0.001$). BPAP/NIV requirement during the course of hospitalization has a significant association with LDH level ($p<0.001$). Follow-up LDH titer during hospitalization as compared to entry point abnormal LDH has a significant association in post-covid lung fibrosis ($p<0.001$). Follow-up LDH titer during hospitalization as compared to entry point normal LDH has a significant association in post-covid lung fibrosis ($p<0.001$).

Conclusion: LDH has documented a important role in COVID-19 pneumonia in predicting the severity of illness and progression of pneumonia. Sequential LDH titers will help assess response to treatment during hospitalization and analyse post-covid lung fibrosis.

Keywords: COVID-19, pneumonia, lactate dehydrogenase

INTRODUCTION

COVID-19 pneumonia is the first global pandemic in the history of mankind.[1,2] COVID-19 is primarily affecting lung parenchyma and secondarily affects airways, pulmonary vasculature and interstitium. Variable pulmonary manifestations are seen in individual cases of COVID-19, such as pneumonia, microvascular thrombosis and interstitial lung disease. In some patients, extra-pulmonary manifestations have been documented resulting from exaggerated inflammatory response resulting into a 'cytokine storm', which is reported in this pandemic. Pathophysiological pathways involved in disproportionate pulmonary and extra-pulmonary manifestations immune activation, inflammatory, thrombogenic and direct viral affection to lungs and extra-pulmonary tissues. Identification of laboratory predictors of progression towards severity and fatality is needed for the efficient management of patients with coronavirus disease 2019 (COVID-19). In this effect, several biochemical analytes that show abnormal values in severely affected patients have been proposed as disease biomarkers, including, among others, serum or nasopharyngeal lactate dehydrogenase (LDH) activity.[3-7]

In the last few decades, LDH has been analyzed as a prognostic marker in haematology and oncology, in hemolytic anaemia, megaloblastic anaemias, Hodgkin disease and non-Hodgkin lymphoma and leukaemias.[8-10] Severe infections, including interstitial pneumonia or acute respiratory distress syndrome (ARDS), may cause tissue damage induced by cytokine production with subsequent release of LDH into the bloodstream.[7-9]

As 5 % of COVID-19 pneumonia cases require intensive care unit treatment, including mechanical ventilation, these patients are at high risk of death.[10,11] Therefore, markers with high positive predictive value for early prediction of ARDS will help in decreasing mortality. In inflammatory panel evaluation, LDH has a very well association with direct lung damage and significantly raised in more widespread tissue injury. A recently published study on a large case series of COVID-19 patients documented that high serum concentrations of LDH were associated with more chance of death due to pneumonia.[12]

The aim of this study was to evaluate the association between LDH level and post-covid fibrosis.

METHOD

This observational study was conducted from July 2020 to May 2021 in two centers, Pulmonary Medicine, MIMSR Medical College and Venkatesh Hospital Latur India. The study included 1000 PCR-confirmed COVID-19. All COVID-19 pneumonia cases above 18-year age, admitted in the indoor unit, have been enrolled in the study. COVID-19 pneumonia cases not willing to participate in the study, cases not willing to undergo follow-up LDH analysis, COVID-19 pneumonia cases who want discharge against medical advice before clinical recovery from the hospital and COVID-19 pneumonia below 18 years of age were excluded from the study (Figure 1).

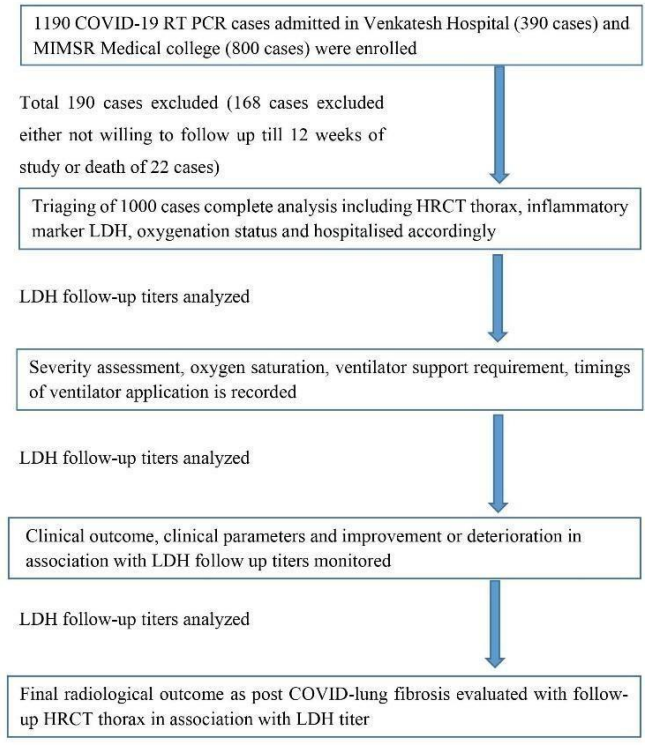

Figure 1: Flow of the study

All of the COVID-19 cases were confirmed with PCR tests performed on nasopharyngeal samples collected with all standard institutional infection control policies. Thorax computer tomography (CT) was applied to assess the severity of lung involvement and categorized as mild if the score

was <7, moderated if the score was 8-15 and severe if the score was >15 or 15-25.[4-6] Clinical assessment and routine biochemistry and hematological workup with viral inflammatory markers such as CRP, Ferritin, LDH, and IL-6 titers.

Entry point LDH titer was utilized as an assessment tool of the severity of illness with clinical parameters. If LDH analysis was normal at the entry point, then LDH titer was repeated on the day of discharge from the hospital or done during hospitalization if the clinical course deteriorated. LDH level was considered normal up to 470 mg/L. A two-fold raised LDH level was classified as significant positive; a four-fold raised LDH level was classified as highly significant. A value raised or decreased in two-to-four-fold change during follow-up was considered significant. If LDH analysis was abnormal at the entry point, we repeated it every 72 hours as the follow-up to assess the severity, progression of illness and also titer level utilized to assess response to medical treatment. Follow-up CT was done after twelve weeks or 3 months of discharge from the hospital for analysis of post covid lung fibrosis in selected cases with abnormal LDH levels at discharge and required bi-level positive airway pressure/noninvasive ventilation (BPAP/NIV) during hospitalization and cases that required oxygen supplementation at home.

Statistical analysis was performed with R-3.4 software. Frequency and percentage were used as descriptive statistics. Chi-square test was used in the analysis of categorical data. A p value was considered significant if it was below 0.05.

RESULTS

A total of 1000 COVID-19 pneumonia cases PCR confirmed COVID-19 cases were included in the study. Six hundred and fifty (65.0%) of cases were male, and 600 (60.0%) of the case were ≥50 years of age. The sociodemographic features according to LDH levels are summarized in Table 1.

A significant difference was found between patients with normal and abnormal LDH levels in terms of CT severity score, duration of illness, oxygen saturation level and BIPAP/NIV requirement ($p<0.001$, $p<0.001$, $p<0.001$ and $p<0.001$, respectively).

The severity of computer CT at diagnosis according to LDH level in COVID-19 cases is summarized in Table 2. On the other hand, the timing of BIPAP/NIV during the course of COVID-19 pneumonia in a critical care setting has a significant association with LDH level ($p<0.001$). BIPAP/NIV onset time according to LDH level in COVID-19 pneumonia cases in summarized in Table 3.

Follow-up LDH titer during hospitalization as compared to entry point abnormal LDH has a significant association in post-covid lung fibrosis ($p<0.001$). Follow-up LDH titer during hospitalization as compared to entry point normal LDH has a significant association in post- COVID lung fibrosis ($p<0.001$). The frequency of post COVID pulmonary fibrosis according to LDH level groups at the time of diagnosis and follow- up are summarized Table 4 and Table 5.

DISCUSSION

We have documented CT severity can be considered the best visual marker of the severity of COVID-19 pneumonia, which can be correlated with inflammatory markers such as LDH, and it will help in triaging cases in casualty and help in targeting interventions in indoor units accordingly to have successful treatment outcome. In many studies, it was documented that LDH level help in predicting the extent of lung involvement, its significantly raised value indicates more lung damage, and resultant hypoxia is the trigger for raised levels due to increased anaerobic metabolism.[13-18]

It was found that COVID-19 pneumonia cases who has <7 days disease duration and cases with >15 days disease duration were having normal LDH levels, while cases between 7-14 days disease duration time had abnormal or raised LDH levels. As the duration of illness in COVID-19 pneumonia cases increases, lung inflammation and tissue necrosis increase with the worsening of hypoxia resulting in high LDH levels.[19,20]

Table 1: Sociodemographic features according to LDH levels

		LDH level normal (n=320)	LDH level abnormal (n=680)	P*
Age groups	≥50 years <50 years	140 (43.7) 180 (56.3)	460 (67.6) 220 (32.4)	**<0.001**
Gender	Male Female	190 (59.4) 130 (40.6)	460 (67.6) 220 (32.4)	**<0.001**
Diabetes mellitus	Yes No	150 (46.8) 170 (53.2)	450 (66.2) 230 (33.8)	**<0.001**
Hypertension	Yes No	160 (50.0) 160 (50.0)	50 (7.4) 630 (92.6)	**<0.001**
COPD	Yes No	100 (31.2) 220 (68.8)	50 (7.4) 630 (92.6)	**<0.001**
IHD	Yes No	110 (34.3) 210 (65.7)	90 (13.2) 590 (86.8)	**<0.001**
Obesity	Yes No	20 (66.6) 300 (33.4)	140 (20.6) 540 (79.4)	<0.001

*COPD: Chronic obstructive pulmonary disease; IHD: Ischemic heart disease; LDH: Lactate dehydrogenase *Chi-squared test*

Table 2: The severity of computer tomography at diagnosis according to LDH level in COVID-19 cases

		Normal LDH (n=320)(%)	Abnormal LDH (n=680) (%)	*p
CT severity score	<8 points 9-15 points >15 points	190 (59.3) 90 (28.1) 40 (12.6)	110 (16.1) 210 (30.8) 360 (53.1)	<0.001
Duration of illness	<7 days 8-15 days >15 days	30 (9.3) 160 (50.0) 130 (40.7)	310 (45.5) 300 (44.1) 70 (10.4)	<0.001
Oxygen saturation	≥90% 75-89% ≤74%	110 (34.3) 150 (46.8) 60 (18.9)	100 (14.7) 340 (50.0) 240 (35.3)	<0.001
BIPAP/NIV requirement	Required Not required	155 (48.4) 165 (51.6)	445 (65.4) 235 (34.6)	<0.001

BIPAP/NIV: Bilevel positive airway pressure/non-invasive ventilation; CT: Computer tomography; LDH: Lactate dehydrogenase
**Chi-squared test.*

Table 3: BIPAP/NIV onset time according to LDH level in COVID-19 pneumonia cases

Onset time	Abnormal LDH (n=290) (%)	Four-fold raised LDH (n=210) (%)	*p
<1 days	110 (37.9)	70 (22.5)	<0.001
3- 7 days	150 (51.7)	160 (51.6)	
After 7 days	30 (10.4)	80 (25.9)	

*BIPAP/NIV: Bilevel positive airway pressure/non-invasive ventilation; LDH: Lactate dehydrogenase *Chi-squared test.*

Table 4: Frequency of post-covid pulmonary fibrosis according to LDH level groups at the time of diagnosis and follow-up

Pulmonary fibrosis	LDH titer increased/abnormal at the entry point (n=400) (%)	LDH titer fourfold increased during follow up (n=280) (%)	*p
Present	40 (10.0)	170 (60.7)	<0.001
Absent	360 (90.0)	110 (38.3)	

*LDH: Lactate dehydrogenase *Chi-squared test.*

Table 5: Frequency of post-covid pulmonary fibrosis according to LDH level groups at the time of diagnosis and follow-up

Post-covid pulmonary fibrosis	Normal LDH at the entry point and remained less than fourfold (n=120) (%)	LDH titer fourfold increased during follow up (n=200) (%)	*p
Present	5 (4.2)	35 (17.5)	**<0.004**
Absent	115 (95.8)	165 (82.5)	

*LDH: Lactate dehydrogenase. *Chi-squared test.*

In the present study, we have documented that LDH level has a positive correlation with the requirement of BIPAP/NIV, high-flow nasal cannula oxygen supplementation and invasive mechanical ventilation in the critical care setting. In two different studies documented the prognostic role of LDH in predicting severity and mentioned that increased LDH levels were associated with about a 6-fold increase in odds of developing severe/critical disease.[21,22] Wang et al observed that elevated neutrophil count, D-Dimer, BUN, creatinine and LDH are predictors of poor outcomes and the maximum patient who require mechanical ventilation in intensive care units and are associated with mortality.[23]

In the present study, LDH level has a significant association with oxygen saturation in COVID-19 pneumonia cases. It was observed that a higher proportion of patients with elevated LDH have significant hypoxia at the entry point, and we have anticoagulation and corticosteroid with protocolized interventions in intensive care units resulting in decreased hypoxia, inflammation and LDH levels during follow-up.[24,25] Xu Zet al. mentioned that postmortem examination of advanced COVID-19 patients as diffuse alveolar damage and hyaline membrane formation, and increased LDH in the blood may be because of diffuse alveolar damage resulting from hypoxia-induced cell necrosis and cytokine-induced lung injury.[26]

In the present study, the timing of BIPAP/NIV requirement during the course of COVID-19 pneumonia in critical care setting has a significant association with LDH level; cases received BIPAP/NIV at entry point <1 day, 3-7 days and after 7 days of hospitalization were documented significance in four-fold raised LDH level in 110/70,150/160 and 30/80 cases, respectively. Rational for similar observation would be, as LDH is involved in the anaerobic metabolism of glucose, up-regulated when oxygen supplies are limited, and its levels are increased in patients with advanced COVID-19 pneumonia requiring ventilatory support.[27-31]

We have documented that serial measurement of LDH during hospitalization, irrespective of entry point abnormal level, has a very well correlation with the requirement of interventions in indoor and intensive care units such as high flow nasal cannula, BIPAP/NIV, and invasive mechanical ventilation. We have observed the usefulness of LDH as markers for evaluating clinical severity and monitoring treatment response in COVID-19 pneumonia. Serial titer will be helpful in assessing the improvement or progression of the disease; persistently high level or rising trends indicates nonspecific responses to hypoxia, tissue injury, and necrosis, indicating underlying radiological progression, which is the earliest predictor of lung fibrosis in these cases.[32-34]

We have documented that normal LDH is a predictor of good clinical and radiological outcomes, and serial measurement of LDH during hospitalization, irrespective of entry point level, has a very well correlation with underlying lung pathology. We have observed that LDH rising trends would help in predicting exaggerated underlying lung parenchymal damage secondary to cytokine-induced lung necrosis and cytokine-induced acute lung injury (ALI)/ARDS. These insults as necrosis or ALI/ARDS, are considered an early marker of future lung fibrosis. We have observed that a small proportion of nonsevere patients developed into severe cases in the first 2 weeks after symptom onset. Therefore, we recommend that all healthcare institutions should also pay close attention to mild patients, identify progressors early, and provide appropriate treatment to reduce mortality. Yan et al. in a retrospective analysis in Wuhan, China, documented similar observations in their study.[30]

In the present study, the age of the patient and gender of included cases has a significant association in COVID-19 cases with normal and abnormal LDH level. It is parallel to other studies.[35-37] In the present study, comorbidities such as diabetes mellitus, chronic obstructive pulmonary disease, ischemic heart disease, hypertension, and obesity have a significant association in COVID-19 cases with LDH levels.[36-37]

CONCLUSION

LDH is an easily available, sensitive, reliable, cost-effective, and universally acceptable inflammatory marker in the COVID-19 pandemic. Correlating LDH with variables like duration of illness, oxygenation status and timing of BIPAP/NIV at the entry point is important to have a satisfactory treatment outcome.

LDH follow-up titer has significant associations in predicting the progression of pneumonia, as a proportionate number of pneumonia cases with mild variety on CT thorax and normal initial LDH has progressed to critical illness, which was documented with the help of rising titers, and we have documented follow-up rising titers has played a crucial role with other inflammatory markers like CRP & ferritin in the intensive care setting.

LDH rising titers in the second week of illness indicate nosocomial bacterial infection and target therapy accordingly, and decreasing LDH titers has very well correlated with improved oxygenation status, excellent response to treatment and decreased underlying inflammation. LDH sequential titer also guides in predicting the risk of progression of COVID-19 pneumonia and post covid lung fibrosis irrespective of entry point titer.

Disclosures

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Conflict of Interest: The authors have no conflicts of interest to declare.

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Ethics Committee Approval: The research was approved by the Venkatesh Hospital and Critical care Center Ethics Committee (Approval date: July 19 2020, and Approval number: VCC/48-2020-2021). Verbal consent was obtained from all participants.

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REFERENCES

1. Lippi G, Plebani M. The critical role of laboratory medicine during coronavirus disease 2019 (COVID-19) and other viral outbreaks. Clin Chem Lab Med 2020;58(7):1063-9.

2. Bohn MK, Lippi G, Horvath A, Sethi S, Koch D, Ferrari M, et al. Molecular, serological, and biochemical diagnosis and monitoring of COVID-19: IFCC taskforce evaluation of the latest evidence. Clin ChemLab Med 2020;58(7):1037-52.

3. Cecconi M, Piovani D, Brunetta E, Aghemo A, Greco M, Ciccarelli M, et al. Early Predictors of Clinical Deterioration in a Cohort of 239 Patients Hospitalized for Covid-19 Infection in Lombardy, Italy. J Clin Med 2020;9(5):1548.

4. Ferrari D, Motta A, Strollo M, Banfi G, Locatelli M. Routine blood tests as a potential diagnostic tool for COVID-19. Clin Chem Lab Med 2020;58(7):1095- 9.

5. Zhang ZL, Hou YL, Li DT, Li FZ. Laboratory findings of COVID-19: a systematic review and meta-analysis. Scand J Clin Lab Invest 2020;80(6):441-7.

6. Gharote MA. Role of Nasopharyngeal lactate dehydrogenase as a possible economical mass screening test for the detection and segregation of SARS-CoV-2 (COVID-19) cases in India. Indian J Med Sci 2020;72(1):21–4.

7. Huijgen HJ, Sanders GT, Koster RW, Vreeken J, Bossuyt PM. The clinical value of lactate dehydrogenase in serum: a quantitative review. Eur J Clin Chem Clin Biochem 1997;35(8):569-79.

8. Stojanovic KS, Lionnet F. Lactate dehydrogenase in sickle cell disease. Clin Chim Acta 2016;458:99- 102.

9. Goldberg DM, Brown D. Biochemical tests in the diagnosis, classification, and management of patients with malignant lymphoma and leukemia. Clin Chim Acta 1987;169(1):1–76

10. Shi J, Li Y, Zhou X, Zhang Q, Ye X, Wu Z, et al. Lactate dehydrogenase and susceptibility to deterioration of mild COVID-19 patients: a multicenter nested case-control study. BMC Med 2020;18(1):168.

11. Zhang JJY, Lee KS, Ang LW, Leo YS, Young BE. Risk Factors for Severe Disease and Efficacy of Treatment in Patients Infected With COVID-19: A Systematic Review, Meta-Analysis, and Meta-Regression Analysis. Clin Infect Dis 2020;71(16):2199-206.

12. Aloisio E, Chibireva M, Serafini L, Pasqualetti S, Falvella FS, Dolci A, et al. A comprehensive appraisal of laboratory biochemistry tests as major predictors of COVID-19 severity. Arch Pathol Lab Med 2020;144:1457–64.

13. Magdy AM, Saad MA, El Khateeb AF, Ahmed MI, El-Din DHG. Comparative evaluation of semi-quantitative CT-severity scoring versus serum lactate dehydrogenase as prognostic biomarkers for disease severity and clinical outcome of COVID-19 patients. Egypt J Radiol Nucl Med 2021;52(1):114.

14. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020;395(10223):497-506.

15. Payán-Pernía S, Pérez LG, Sevilla AFR, Gil JS, Canales SN. Absolute Lymphocytes, Ferritin, C-Reactive Protein, and Lactate Dehydrogenase Predict Early Invasive Ventilation in Patients With COVID-19. Lab Med 2021;52(2):141-5.

16. Tordjman M, Mekki A, Mali RD, Monnier H, Neveu S, Chassagnon G, et al. Determining extent of COVID-19 pneumonia on CT based on biological variables. Respir Med. 2020;175: 106206.

17. Deng X, Liu B, Li J, Zhang J, Zhao Y, Xu K. Blood biochemical characteristics of patients with coronavirus disease 2019 (COVID-19): a systemic review and meta-analysis. Clin Chem Lab Med 2020;58(8):1172-81.

18. Xi X, Xu Y, Jiang L, Li A, Duan J, Du B. Hospitalized adult patients with 2009 influenza A(H1N1) in Beijing, China: risk factors for hospital mortality. BMC Infect Dis 2010;10:256.

19. Liu CL, Lu YT, Peng MJ, Chen PJ, Lin RL, Wu CL, et al. Clinical and laboratory features of severe acute respiratory syndrome vis-a-vis onset of fever. Chest 2004;126(2):509-17.

20. Huang H, Cai S, Li Y, Li Y, Fan Y, Li L, et al. Prognostic Factors for COVID-19Pneumonia Progression to Severe Symptoms Based on Earlier Clinical Features: A Retrospective Analysis. Front Med (Lausanne) 2020;7:557453.

21. Henry BM, Santos de Oliveira MH, Benoit S, Plebani M, Lippi G. Hematologic, biochemical and immune biomarker abnormalities associated with severe illness and mortality in coronavirus disease 2019 (COVID-19): a meta-analysis. Clin Chem Lab Med 2020;58(7):1021-8.

22. Lv XT, Zhu YP, Cheng AG, Jin YX, Ding HB, Wang CY, et al. High serum lactate dehydrogenase and dyspnea: Positive predictors of adverse outcome in critical COVID-19 patients in Yichang. World J Clin Cases 2020;8(22):5535-46.

23. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. JAMA 2020;323(11):1061-9.

24. Fang X, Mei Q, Yang T, Li L, Wang Y, Tong F, et al. Low-dose corticosteroid therapy does not delay viral clearance in patients with COVID-19. J Infect 2020;81(1):147-78.

25. Li X, Xu S, Yu M, Wang K, Tao Y, Zhou Y, et al. Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan. J Allergy Clin Immunol 2020;146:110–8.

26. Xu Z, Shi L, Wang Y, Zhang J, Huang L, Zhang C, et al. Pathological findings of COVID-19 associated with acute respiratory distress syndrome. Lancet Respir Med 2020;8(4):420-2.

27. Wu C, Chen X, Cai Y, Xia J, Zhou X, Xu S, et al. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. JAMA Intern Med 2020;180:934–43.4

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İstenmeyen gebelik öyküsü durumuna göre kadınların aile planlaması yöntem tercihlerinin incelenmesi

Famıly plannıng method selections of women with and without unwanted pregnancy

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ABSTRACT

Objective: The aim of this study is to determine differences between the family planning method choices of women with a history of unwanted pregnancy .
Material and method: This descriptive study was conducted with 300 women applied to Gynecology and Family Planning polyclinics of Lütfi Kırdar Kartal Training and Research Hospital. The working group was divided into two groups within itself according to the unwanted pregnancy history. Both groups were evaluated in terms of factors that may directly or indirectly affect unwanted pregnancies.
Results: Three hundred women participated in the study. The rate of unwanted pregnancy was 50.0% (n=150). The median of unwanted pregnancies was 4 (min:0-max: 6). Unwanted pregnancy rate is significantly higher in the 36- 45 age group (p=0.030). When the distribution of the cases regarding the family planning method used is examined, the most preferred methods in both groups are respectively; with drawal, intauterin device and condom. When the two groups were compared, non significant difference was observed (p>0.05).
Conclusion: In conclusion, it was seen that there was nosignificant difference in terms of the methods used by the women in the two groups. For this reason, it is necessary to provide education and consultancy services to reproductive health and family planning women at every step they receive health care services.
Keywords: Unwanted pregancy, family planning, contraceptives

GİRİŞ

Aile planlaması çiftlerin istedikleri sayıda çocuk sahibi olma ve doğum aralığını serbestçe belirlemesine olanak tanıyan eğitim ve araçların bütünüdür. [1] Aile planlamasının iki temel amacı vardır: istenmeyen gebelikleri ve buna bağlı olarak anne ve bebek ölümlerini önlenmesi ve ana-çocuk sağlığı düzeyinin yükseltilmesi. [2] Aile planlaması yöntemlerine erişimi kolaylaşmasına rağmen istenmeyen gebelikler halen önemli bir halk sağlığı sorunu olarak karşımıza çıkmaktadır.

Yapılan en iyimser tahminlerde Dünya'daki tüm gebeliklerin 5'te 1'inin istenmeyen gebelik olduğu bildirilmektedir. Amerika Birleşik Devletlerinde istenmeyen gebeliklerin oranı %49'dur. [3] İstenmeyen gebelikler özellikle az gelişmiş ve gelişmekte olan ülkelerde güvenli olmayan düşük girişimleri ile sonlandırılmakta bu ise sıklıkla anne ölümleriyle sonuçlanmaktadır. [4] İstenmeyen gebeliklerin yaklaşık yarısı doğumla sonuçlanmaktadır. [2] Yapılan çalışmalarda kürtajla sonlandırılan istenmeyen gebeliklerden sonra herhangi bir aile planlaması yöntemi kullanan kadınların oranı %40'dır. [5]

Aile planlaması yöntemlerine ulaşmak giderek kolaylaşırken doğurganlık çağındaki kadınların birçoğu, ya bu yöntemlerden habersiz ya da yöntemlere ilgisizdir. Cinsel partnerlerinin de etkisiyle ya da olmadan, güvenilirlik düzeyi çok düşük yöntemlerle gebelikten korunmaya çalışmaktadırlar. Bunun tabii sonucu olarak da istenmeyen gebelikler yaşamakta, çözüm olarak da gebeliğin tahliyesini (küretaj) görmektedirler. [6] Kürtaj veya düşük sonrası ile ilgili yapılmış çalışmalar kadınların bu deneyimlerinden sonra suçluluk, kızgınlık, günah işlemek veya benzer duyguları yaşadıklarını ortaya koymuştur. Bunların dışında sürekli olarak benzer bir durumla karşılaşma ihtimali, kadınların cinsel yaşantısını da olumsuz bir biçimde etkilenmektedir.[3] Bu çalışmanın amacı istenmeyen gebelik öyküsü olan kadınlarla, istenmeyen gebeliği olmayan kadınların aile planlaması yöntem seçimleri arasındaki benzerlik ve/veya farklılıkların belirlenmesidir.

YÖNTEM

Retrospektif ve tanımlayıcı tipteki bu çalışma Dr. Lütfi Kırdar Kartal Eğitim ve Araştırma Hastanesi Kadın Hastalıkları ve Doğum Kliniği Jinekoloji ve Aile Planlaması polikliniklerine başvuran kadınlarla yürütülmüştür. Doğurganlık döneminde olup, cinsel aktif olan ve herhangi bir aile planlaması yöntemini kullanan ve aile planlaması danışmanlığı almak, herhangi bir aile planlaması yöntemine başlamak veya mevcut kullandığı yöntemi değiştirmek ya da kontrol amaçlı olarak aile planlaması polikliniğine başvuran 300 hasta basit randomizasyon yöntemiyle çalışmaya alınmıştır. Çalışma verileri çalışmaya katılan kadınların sözlü onamları sonrasında araştırmacılar tarafından oluşturulan bir anket formunun yüz yüze uygulanmasıyla elde edilmiştir.

Çalışma grubu kendi içerisinde nested olgu kontrol dizaynına uygun olacak şekilde istenmeyen gebelikleri olanlar (olgu) ve olmayanlar (kontrol) olacak şekilde iki ana gruba ayrılmıştır. Her iki grup istenmeyen gebeliklere dolaylı ve dolaysız yönden etkili olabilecek faktörler açısından değerlendirilmiştir. Çalışmanın bağımlı değişkeni istenmeyen gebelik varlığı bağımsız değişkenleri ise yaş grupları, eğitim durumları, doğurganlık özellikleri (gravida, parite, abortus, küretaj, yaşayan çocuk sayıları), istemeyen gebelik sayısı, kullanılan ve kullanılmak istenen kontraseptif yöntemler olarak belirlenmiştir.

Çalışma verileri SPSS 10.5 paket programı ile analiz edilmiştir. Veriler girildikten sonra, frekans dağılımı, yüzde, aritmetik ortalama, oran testi ve ki kare testi ile analiz edilmiştir. P değeri <0,05 anlamlılık düzeyi esas alınmıştır.

SONUÇLAR

Çalışmaya 300 kadın katılmıştır. İstenmeyen gebelik öyküsü olanların oranı %50.0 (n=150)'dir. Katılımcıların demografik özellikleri tablo1'de derlenmiştir.

Olguların gebelik sayısına ilişkin dağılımları incelendiğinde, ortanca istenmeyen gebelik sayısı 4 iken(min:0- max:6); ortanca istenen gebelik sayısı ise 2 (min 0:-max:4)'dir. İstenmeyen gebeliği olan olguların daha fazla gebelikle karşılaştığı gözlenmiştir. Her iki grubun tercih ettiği doğum yöntemi arasında farklılık gözlenmemiştir. İstenmeyen gebeliği olan kadınlarda çocuk ölümü daha fazladır. Yaşayan çocuk sayısı 4 ve üstü olduğu durumlar istenmeyen gebeliklerde anlamlı olarak fazlaydı. İstenmeyen gebeliği olan olguların, %61.0 (n=92)'i 1 kere, %8.0 (n=12)'i ise 4 kere ve üzerinde küretaj yaptırdığını belirtmiştir. İstenmeyen gebeliği olan olguların, %61.0 (n=92)'i 1 kere, %26.0 (n=39)'sı 2 kere, %14.0 (n=21)'ü ise 3 kere ve üzerinde istenmeyen gebelikle karşılaştığını belirtmiştir.

Tablo 1: Planlı ve plansız gebelikleri olan katılımcıların genel özellikleri

		İstenmeyen gebelik grubu (n=150)	Planlı gebelik grubu (n=150)	p
Yaş (yıl)	15 - 25	6,0 (9)	15,0 (23)	0,030
	26 - 35	35,0 (53)	43,0 (65)	
	36 - 45	59,0 (88)	41,0 (62)	
Eğitim	≤ 8 yıl	75,0 (113)	77,0 (115)	0,654
	>9 yıl	25,0 (37)	23,0 (35)	
Gebelik Sayısı	1	4,0 (6)	21,0 (31)	0,032
	2	13,0 (20)	33,0 (49)	
	≥3	83,0 (124)	46,0 (70)	
Doğum Şekli	Normal	80,0 (116)	77,0 (115)	0,514
	Sezeryan	20,0 (29)	23,0 (25)	
Yaşayan Çocuk Sayısı	0	4,0 (6)	1,0 (1)	0,413
	1	19,0 (29)	24,0 (36)	
	2	33,0 (48)	41,0 (61)	
	≥3	44,0 (67)	34,0 (52)	
Kullanılan AP Yöntemi	Geri Çekme	42,0 (63)	47,0 (70)	0,442
	Kondom	14,0 (21)	11,0 (17)	
	RIA	23,0 (35)	23,0 (34)	
	OKS	5,0 (8)	6,0 (9)	
	Enjeksiyon	3,0 (4)	-	
	BTL	6,0 (9)	5,0 (8)	
	Kullanmıyor	7,0 (10)	8,0 (12)	
Kullanmayı planladığı AP Yöntemi	Geri Çekme	29,0 (42)	44,0 (67)	0,845
	Kondom	7,0(11)	8,0 (12)	
	RIA	31,0 (46)	27,0 (40)	
	OKS	10,0(15)	7,0 (10)	
	Enjeksiyon	5,0 (8)	-	
	BTL	11,0 (17)	7,0 (10)	
	Kullanmıyor	7,0 (11)	7,0 (11)	

Veriler % (n) olarak sunulmuştur, Ki kare testi

Olguların kullandığı AP yöntemine ilişkin dağılımları incelendiğinde, her iki grupta da en çok tercih edilen yöntemler sırasıyla; geri çekme, RIA ve kondom'dur. İki grup karşılaştırıldığında, anlamlı bir farklılık gözlenmemiştir. Katılımcıların ilerde kullanmayı planladıkları AP yöntemi ele alındığında, istenmeyen gebeliği olan olgularda geri çekme ve kondom kullanım isteğinin azaldığı buna karşılık RIA, OKS, aylık enjeksiyon ve BTL yöntemlerini kullanma isteğinin arttığı gözlenmektedir. Planlı gebelik grubunda ise şu an kullandıkları yöntemleri değiştirmeyi düşünmediği görülmüştür. Planlı gebelik grubunun geri çekme yöntemini istenmeyen gebeliği olan olgulara oranla daha fazla kullanmayı düşündüğü görülmektedir.

TARTIŞMA

Dünyada her bir dakikada 380 kadın gebe kalmakta,190 kadın istenmeyen veya planlanmayan gebelikle karşılaşmakta, 110 kadın gebelikle ilgili komplikasyon yaşamakta, 40 kadın tehlikeli düşük yapmakta, 1 kadın ölmektedir.[3] Ulusal düzeyde yapılan çalışmalarda istemli düşük oranları %6-18 arasında bildirilmektedir. [7,8] İstenmeyen gebeliklerin yaklaşık yarısının doğumla sonuçlandığı düşünülürse bu oranlar bile istenmeyen gebeliklerin ülkemiz içinde ne denli önemli bir halk sağlığı sorunu olduğunu göstermektedir. İstenmeyen gebelikler çoğunlukla güvenilir bir kontrasepsiyon kullanmamaya, daha az bir kısmı da kontrasepsiyon yöntemin başarısızlığına bağlıdır.[9] Kontrasepsiyon yöntemlerin kullanımıyla 91.7 milyon istenmeyen gebelik önlenebilir ve gebelik sonlandırmaları da % 40 oranında azaltılabilir. [10] İstenmeyen gebelikler sıklıkla kırsalda yaşayan, genç, çok çocuklu, eğitimsiz ve düşük sosyo ekonomik düzeye sahip kadınlarda görülmektedir. [11]

Çalışma sonucunda istenmeyen gebeliklerin 36-45 yaş grubunda anlamlı olarak arttığı ve eğitim düzeyi açısından farklılık göstermediği belirlenmiştir. Literatürde ağırlıklı olarak yaş ile istemsiz gebelik arasında ters bir ilişki gösterilse de bu durum kültürden kültüre farklılık göstermektedir. [12] Türkiye'de yapılan bir çalışmada 35 yaş altı olmanın istemsiz gebelik riskini 2.14 kat, üniversite ve altı eğitim düzeyine sahip olmanın 2.18 kat arttırdığı sonucuna ulaşılmıştır. [13] Ancak erken yaşta evliliğin söz konusu olduğu ülkelerde kadınlar evliliği takip eden kısa süre içerisinde gebe kalmaktadır. Bu gebelikler sıklıkla istemli gebeliklerdir. [12] Eğitim düzeyi arttıkça istenmeyen gebelikler azalmaktadır. Bunun temel nedeninin kadınları kariyer seçimi sonrası evlilik ve gebe kalmayı seçmesi olabilir. [14]

Çalışma sonucunda istenmeyen gebelik öyküsü olan kadınların gebelik ve yaşayan çocuk sayılarının anlamlı olarak daha yüksek olduğu görülmüştür. Yine bebek ve çocuk ölümü oranları bu grupta anlamlı olarak yüksekti. İstemli gebeliklerin ortanca gebelik sayısı ise 2 olarak bulunmuştur. Yapılan ulusal bir çalışmada 3 ve üstü çocuk sahibi olunmasının istemsiz gebeliği 1.54 kat arttırdığı, istemsiz gebeliği olan kadınlarda istemli düşükleri ise 3.06 kat arttırdığı sonucuna varılmıştır. [13] Öte yandan yüksek çocuk sayısı ve bebek ve çocuk ölümlülüğünün düşük sosyoekonomik düzey ile ilişkili olduğu gösterilmiştir. Bu açıdan bu faktörlerin hepsi istenmeyen gebelik özelinde iç içe girmiş ve birbiri üzerine etki etmektedir.

Çalışma sonucunda grupların kullandıkları aile planlaması yöntemleri açısından anlamlı bir farklılık gösterilememiştir. Ulusal veriler dikkate alındığında ülkemizde istenemeyen gebeliklerin öncesinde kadınların sıklıkla kullanmakta oldukları yöntemler geri çekme (%46.1), kondom (%10.4) ve rahim içi araç (%5.0)'tir. Öte yandan kadınların %24.4'ü ise herhangi bir yöntem kullanmamaktadır. [15] Bizim çalışmamızda da istenemeyen gebelik öyküsü olan kadınların kullandıkları yöntemler geri çekme, RIA ve kondom'dur. RIA'nın kondomun önüne geçmesi çalışmanın RIA uygulaması yapılabilen bir aile planlaması polikliniği olması olabilir. Yapılan bir çalışmada istenmeyen gebelik öyküsü olan kadınların %36'sının herhangi bir yöntem kullanmadığı, %24'ünün geri çekme, %22'sinin kondom ve %1'inin ise RIA ile korunduğu gösterilmiştir. [16]

Yapılan çalışmalar istenemeyen gebeliklerin önlenmesinde aile planlaması yöntemlerinden herhangi birisinin kullanılmasının etkin olduğunu göstermektedir. Ancak yöntemin bilinmesi yanında etkin, doru ve devamlı kullanımı da hayatidir. Yapılan bir çalışmalarda istenmeyen gebeliklerin temel sebeplerinden birinin aile planlaması yönteminin yetersizliği veya yöntemin hatalı veya uygulanması olduğu gösterilmiştir. [17,18] Yöntem seçiminde, uygulama ve yöntemin sürekliliğinde kadının sosyoekonomik durumu, eğitim düzeyi ve kültürel faktörler ve sağlık hizmetlerine ulaşımı etkilidir. [19] Yaptığımız çalışmada istemsiz gebelik öyküsü olan kadınlar mevcut kullandıkları aile planlaması yöntemini başarısızlık oranları daha düşük olan tüp ligasyonu veya enjeksiyon gibi yöntemleri ile

değiştirmek istemektedir. Planlı gebeliği olanlarda ise böyle bir talep söz konusu değildir. Buradan hareketle sağlık kuruluşlarına başvuran kadınlara sürekli olarak aile planlaması eğitim ve danışmanlığı verilmesi yöntem başarısızlığı ve yanlış yöntem seçimini engelleyebilir.

SONUÇ

Çalışma sonucunda iki gruptaki kadınların kullandıkları yöntemler açısından anlamlı bir farklılık olmadığı görülmüştür. Öte yandan istemsiz gebeliği olanların mevcut kullandıkları yöntemi değiştirme yönündeki eğilimleri yanlış yöntem seçimi veya hatalı kullanımı önplana çıkarmaktadır. Bu verilerin aile planlaması hizmeti verilen bir merkezden elde edilmiş olması genel popülasyonda daha çarpıcı sonuçlara ulaşılabileceğini düşündürmektedir. Bu nedenle üreme çağındaki kadınlara sağlık hizmeti aldıkları her basamakta üreme sağlığı ve aile planlaması ile ilgili eğitim ve danışmanlık hizmetlerinin verilmesi gereklidir.

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KAYNAKLAR

1. Özvarış ŞB. Aile planlaması. Aktüel Tıp Dergisi 2001;6:45-51.

2. TC Sağlık Bakanlığı Ana Çocuk Sağlığı ve Aile Planlaması Genel Müdürlüğü, Ulusal Aile Planlaması Hizmet Rehberi 1. Ankara, 1995.

2. Henshaw SK. Unintended pregnancy in the United States. Fam Plan Pers 1998;30:24- 9,46.

3. Gichangi PB, KaranjaJG, Kigondu CS,K Knock,M Temmerman. Knowledge, attitudes and practices regarding emergency contraception among nurses and nursing students in two hospitals in Nairobi, Kenya. Contraception 1999; 59:253-256.

4. Bulut A. Acceptance of effective contraceptive methods after induced abortion. Study Fam Plan 1984;15(6):281-284.

5. Akın A, Özvarış ŞB; Ana sağlığı ve aile planlaması. In: Bertan M, Güler Ç. (Eds) HalkSağlığı (Temel Bilgiler) Güneş Kitabevi Ltd.Şt. Ankara 1995; 135.

6. Sevindik FN, Acik Y, Gulbayrak C, Akgun D. Traditional methods which are known and applied in order to achieve voluntary abortion by married women living in Elazig. TAF Prev Med Bull 2007; 6: 321-4.

7. Yilmaz SD, Ege E, Akin B, Celik C. The reasons of induced abortion and contraceptive preference in 15-49 years women IUFN Hem Derg 2010; 18: 156-63

8. Jones RK, Darroch JE, Henshaw SK. Contraceptive use among U.S. women having abortions in 2000-2001.Perspect Sex Reprod Health 2002;34:294-303.

9. Westhoff C.Emergency contraception. N Eng J Med 2003;349: 1830-35.

10. Eggleston E. Determinants of unintended pregnancy among women in Ecuador. Int Fam Plan Pers 1999; 25: 27-33

10. Japarizade T, Kristesashvili J. Unintended pregnancies, their outcome and prior usage of contraception in Georgia.Iran J Pub Health 2017;46(2):199-206.

11. Nur N. Socioeconomic disparities among ever married Turkish women who had unintended pregnancies and abortions in a middle Anatolian city. Women and Health 2012;52(7):716-29.

12.YagoSimón T, TomásAznar C. Sociodemographic and clinical data predicting unintended pregnancy in young 13 to 24 years, Spain. Rev Esp Salud Publica 2014; 88(3):395–406.

13.Tezcan S, Coskun Y, Biliker MA. İstiyerek düşükler. Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü Türkiye Nüfüs ve Sağlık Araştırması 2003 İleri Analiz Raporu Ankara 2005.p63-89.

14.Larsson M, Aneblom G, Odling V, Tyden T. Reasonsfor pregnancy termination, contraceptive habits and contraceptive failure among Swedish women requesting an early pregnancy termination. Acta Obstet Gynecol Scand 2005;81(1):64- 71.

15.Kost K, Singh S. Estimates of Contraceptive Failure from the 2002 National Survey of Family Growth. Contraception 2008;77(1):10-21.

16.Kramer MR, Hogue CR, Gaydos L. Noncontracepting Behaviour in Women at Risk for Unintended Pregnancy: What's Religion Got to Do With It? Ann Epidemiol 2007;17(5):327-34

17.Galcidou E, Vayena E. Use of Modern Contraception by the Poor is Falling Behind. PloSMed 2007;4(2):381-9.

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Letter to editor

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RESPONDING TO THE COVID-19 PANDEMIC: LIMITATIONS OF UTILITARIANISM

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To the Editor,

The corona virus disease 2019 (COVID-19), a novel infection with serious immediate and delayed clinical complications, was initially detected in the wet markets in Wuhan, China, in late 2019.[1] COVID-19 was declared a pandemic by the World Health Organization on 11 March 2020. COVID-19 infected more than 648 million people worldwide and caused nearly 6.65 million fatalities by December 2022.[2] The COVID-19 pandemic stretched the public health and health systems across the globe to their limits. The extraordinary and sustained demands for healthcare resources had created a need for the rationing of medical equipment and interventions. Doctors in many parts of the world faced horrifying choices about which patients should get a ventilator, a life-saving treatment in the context of COVID-19 infection. Utilitarian principles were employed by various countries and organizations to allocate their scarce health resources during the COVID-19 pandemic. The most common principles employed were maximizing the benefits produced by scarce resources, promoting, and rewarding instrumental value, and giving priority to the worst off.[3]

Maximization of benefits during the COVID-19 pandemic suggests that scarce medical resources should be allocated to saving the most individual lives or saving those patients who are likely to survive the longest after treatment.[3] In practice, it demands that medical practitioners sacrifice the most vulnerable patients for other patients with

better prognoses. In busy hospitals with a massive influx of patients and extreme scarcity of intensive care unit(ICU) beds, many clinicians had to take traumatic decisions to withdraw ventilators or ICU support from patients who arrived earlier to save those with a better chance of surviving longest after treatment. Such a controversial utilitarian policy regarding life-or-death decisions in favor of the young over the old shakes many ethical convictions. However, many recent intensive care guidelines during the COVID-19 pandemic support such decision- making. According to many guidelines, withdrawing a scarce resource to save others during a pandemic is not killing and does not require the patient's consent. However, empirical research suggests that there is a relationship between age and the perception of the ethicality of preferring the young over the old in emergency clinical situations with respect to scarce medical resources. A recent study showed that such an act was viewed as ethical by 66% of people between 18-30 years of age, whereas only 33% of people 60 or older agreed with the ethicality of such an act.[4] Moreover, such a utilitarian policy decision categorizing people based on age with respect to medical treatment might go against the right to health of each human being as enshrined in the universal human rights frameworks. Furthermore, vulnerable groups such as the elderly have become more vulnerable during the COVID-19 pandemic and need more protection and care rather than stigmatization and discrimination. Every effort should be made to protect and promote the human dignity of vulnerable groups during such a crisis. However, a utilitarian worldview might not appreciate such human dignity violations while focusing on the maximization of benefits during the COVID-19 pandemic.

Most countries across the world took extreme decisions to control the spread of COVID-19 infection in the form of travel restrictions and lockdowns. Such extreme measures were justified based on the utilitarian idea of maximizing the benefit and minimizing the harm at the population level.[5] However, such actions significantly affected the vulnerable sections of society. Many individuals with vulnerabilities such as poverty, illnesses, disability, etc, had suffered disproportionately worse. Millions of migrant workers in Indian cities became homeless during the lockdown period and had to walk hundreds of kilometers to reach their homes, and many died during theirjourney.

Though many developed countries took extremely good social security measures to protect the vulnerable sections of society during the lockdown period, such actions were absent in most of the underdeveloped countries.[5] Moreover, most of the hospitals stopped their regular outpatient services and switched to online patient care, which was not accessible to a significant section of the vulnerable population, especially in developing countries with limited internet connectivity.

Another important utilitarian idea promoted during the COVID-19 pandemic was to categorize individuals based on their instrumental value and prioritize them over others in getting medical treatment and COVID-19 vaccination.[3] Based on this principle, healthcare workers were given priority in testing, ventilators, treatments, and vaccines across the world. Many also supported such an initiative as a reward for their selfless activities during the COVID-19 pandemic. However, there are many other groups of people who are also doing similar jobs during the COVID-19 pandemic, such as essential workers, policemen, supermarket workers, drivers, etc., who also need to get proper priorities in treatment and vaccination. Developing rules of thumb for assessing instrumental value and social worth is ethically complex, liable to abuse, and difficult to enforcefairly.

COVID-19 vaccination campaigns across the globe also raised many ethical challenges.[5] Since many vaccine candidates came to the market, we have seen that high-income countries obtained and used the bulk of vaccines when lower-income countries were in far greater need. A just or fair distribution of COVID-19 vaccination may not be feasible in a utilitarian society because the outcome that generates the greatest good overall in a society may be very different from the outcome whose distribution of goodness comes closest to being just or fair. A COVID-19 vaccination strategy ensuring equal access at the population level is a challenging task. The utilitarian ideas demand that equal priority should be given to all individuals for vaccination, respecting each person's inherent moral equality. However, such policies fail to address many background structural inequalities that impact certain groups' abilities to even access the queue for COVID-19 vaccination. Rather than equal access as proposed by utilitariantheory, what theworld needed

was equitable access to COVID-19 vaccination to effectively prevent the spread of the COVID-19 pandemic. Many of the vulnerable sections of society who might miss COVID-19 vaccination in a system promoting equal access might also be the riskiest group with respect to COVID-19 spread, considering their biological and sociodemographic characteristics. Hence, vaccinating significant sections of society by excluding the most vulnerable group will not prevent the COVID-19pandemic.

In conclusion, utilitarian principles were employed across the world while solving ethical challenges associated with the COVID-19 pandemic. However, many more ethical problems also resulted from their applications during this pandemic, highlighting the limitations of utilitarian ideas.

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REFERENCES

1. Mackenzie JS, Smith DW. COVID-19: a novel zoonoticdisease caused by a corona virus from China: what we know and what we don't. Microbiol Aust 2020:MA20013.

2. Worldometer. Corona virus Updates. Available at:https://www.worldometers.info/. Accessed January 18,2021.

3.Emanuel EJ, Persad G, Upshur R, Thome B, Parker M, Glickman A, et al. Fair Allocation of Scarce Medical Resources in the Time of Covid-19. N Engl J Med2020;382(21):2049-55.

4. Bazerman MH, Bernhard R, Greene J, Huang K, Barak-Corren N. How Should We Allocate Scarce Medical Resources? Harvard Business Review. 2020. Available at:https://hbr.org/2020/04/how-should-we-allocate- scarce- medical-resources. Accessed January 18, 2021.

5. Jesline J, Romate J, Rajkumar E.George AJ. The plight of migrants during COVID-19 and the impact of circular migration in India:a systematic review. Humanit Soc Sci Commun 2021;8:231.

6. Gupta R, Morain SR. Ethical allocation of future COVID-19 vaccines. J Med Ethics 2020.

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KUDUZ RİSKLİ TEMAS HALEN GÜNDEMDEKİ YERİNİ KORUYOR

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Geçen aylar içinde ülkemizde 11 yaşında bir çocuğun başıboş köpeklerin ısırması sonucu tedavi gördüğü hastanede yaşamını yitirmesi kuduz riskli temasın halen önemli bir halk sağlığı sorunu olduğunu bizlere tekrar hatırlattı. Bu mektupta kuduz ile güncel bilgilerin kabaca gözden geçirilmesi amaçlanmıştır.

Kuduz insanlık tarihi kadar eski bir bulaşıcı hastalıktır.[1]İlk defa Louis Pasteur tarafından etkeni tanımlanmıştır.Aşılama olanaklarının 100 yılı aşkın süredir olmasına karşın kuduz hali hazırda önemli bir halk sağlığı sorunu olarak karşımıza çıkmaktadır. Kuduz tedavi olanaklarının ileri seviyede olmasına karşın ölümle sonuçlanman bir hastalıktır. Bu açıdan koruyuculuk bu hastalık açısından en önemli gündem maddesidir. Kuduz viral bir hastalık olup, etkeni Rhabdoviridae ailesinden tek sarmallı bir RNA virüsüdür. Dünyadaki İnsan kuduz olgularının %99'u köpek orijinli memeli Rabies virüs nedenlidir.[2]

Tilki, kurt, çakal, porsuk,gelincik, yarasa, geyik ve rakun gibi vahşi ve evcil hayvanlar kuduz açısından risk taşımaktadır.[3]Genel olarak vücuda giriş yolu en sık ısırıklar sonucu cilt bütünlüğünün bozulmasıdır.Ancak yaralı deri, mukozalardan yalama, tırmalama, solunum yolu ve organ transplantasyonu gibi yollarla da kuduz bulaşı olabilir. Virüs enfekte hayvanın tükürük bezleri ile atılır.[4] Bu nedenle kuduzun en yaygın bulaş yolu ısırıklardır. Isırma yolu ile bulaş riski %5-80 arasındadır ve diğer yollarla bulaş olasılığından 50 kat daha fazladır.

Kuduz yavaş ilerleyen bir özelliğe sahiptir.[5]Isırılma sonrası alınan virüs belirli bir süre durağan kalır (kuluçka dönemi). Bu dönemin uzunluğu ısırılma yeri, virüs konsantrasyonu ve bölgenin inervasyon yoğunluğuna göre değişir. Kuluçka döneminde kas liflerinde çoğalan virüs duyusal sinirler ve motor sinirler vasıtasıyla sinir sistemine invaze olur.

Klinik olarak bakıldığında kuluçka dönemi sonrası 1-7 gün arası süren prodromal dönem başlar.[6] Bu dönemde hastalığa özgü olmayan iştahsızlık, boğaz ağrısı, baş ağrısı ve aşırı duyarlılık gibi bulgular görülebilir. Özellikle bu dönemde ısırık yerinde karıncalanma, hiper/hipoestezi ve ağrı olması önemli klinik uyarılardır.Prodromal dönem sonrası klinik kuduz tablosu görülür.Kuduz klinikte kendini iki şekilde göstermektedir: Klasik kuduz ve paralitik kuduz. Klasik kuduz olguları saldırgan ve içine kapanık tipte olabilir. Serebral, spinal ve periferik sinirlerin tutulduğu bu dönemde nöropsikiyatrik bulgular ön plandadır. Hastalar içine kapanık sessiz olabileceği gibi halüsinasyon ve illüzyonların eşlik ettiği ajitasyon, eksitasyonlarlada seyredebilir.Kuduza özgü durumlardan bazıları hidrofobi, aerofobi ve fotofobidir.Paralitik kuduz ajitasyon ve bilinç değişikliği içermediği için tanısal olarak zor bir durumdur. Genellikle ısırılan alandan başlayan güçsüzlük ve zayıflık ile başlayan tablo progresif olarak ilerler ve tüm ekstremiteleri tutar.

Kuduz epidemiyolojisi

Kuduz önemli bir halk sağlığı sorunudur.[7] Dünya Sağlık Örgütü verilerine göre dünya genelinde 3 milyara yakın insan kuduzdan etkilenmektedir. Kuduzun yoğun olarak etkili olduğu Asya kıtasında yılda 30,000 kişinin kuduz nedenli olarak öldüğü bildirilmektedir. Gerçekleşen ölümlerin %15'i ise çocuklarda gerçekleşmektedir. Asya kıtasında kuduz özellikle Bangladeş ve Hindistan'da baskındır. Bu iki ülkeyi Nepal, Tayland, Myanmar ve Butan takip etmektedir. Kuduz nedenli ölümün en yüksek olduğu ülke ise Nepal'dir.

Gelişmekte olan birçok ülkede, yetersiz raporlama, kültürel inançlar, zayıf veya yetersiz kuduz teşhis birimleri ve bulaşma şekli ve hastalığın önlenmesi konusundaki yetersiz bilgi nedeniyle kuduz enfeksiyonuna bağlı insan ölüm oranı düşüktür.[8] Gelişmekte olan ülkelerde endemik kuduz vakalarının eksik raporlanması, hastalığın tıp uzmanları tarafından görmezden gelinmesine ve ardından uluslararası toplum ve yardım kuruluşlarından yetersiz yardım alınmasına neden olmuştur.

Ülkemiz kuduz açısından endemik bir bölgedir buna karşın kuduzun kontrolü ile ilgili yürütülen programlar nedeniyle yıllık görülen vaka sayısı 1-2 ile sınırlıdır.[6]

Kuduz riskli temas proflaksisi

Kuduz riskli temas sıklıkla ısırma veya tırmalama neticesinde olduğu için yara bakımı, tetanos proflaksisi ve kuduz proflaksisini içermelidir.[6] Bu yazıda sadece kuduz proflaksisi ele alınacaktır.Temas sonrasında proflaksiye temasın yeri, türü ve zamanından bağımsız olarak olabildiğince erken başlanmalıdır.Tüm yaralanmalarda olduğu gibi yara yerinin temizlenmesi ilk olarak yapılması gerekli şeydir. Yara yeri bol su ve sabunla ile yıkanmalıdır, bu işlem sonrası antiseptik kullanılabilir. Ancak temel amaç yara yerinin mekanik temizliği olduğundan yıkama işlemi mutlaka yapılmalıdır. Ülkemizde kuduz açısından aşı uygulaması 4 dozluk şema ile yapılmaktadır. Bu şemada ilk doz, sonrasında 3. gün, 7.gün ve 14-28 günler arası birer doz olacak şekilde aşılama yapılabilir. Bunun dışında daha nadir olarak 2.1.1 şeması denilen ve ilk gün farklı ekstremitelerden 2 doz sonrasında 7 ve 21. Günlerde birer doz olacak şeklinde de aşılama yapılabilir. Eğer aşılamaya herhangi bir aşamada ara verilirse kalındığı yerden devam edilebilir. Aşılama dozu ve şeması yaştan bağımsızdır.

Gebelerde de aynı doz ve şemada aşılama yapılmalıdır.Sağlıklı kişilerde antikor yanıtının 2-4 hafta içinde gelişeceği akılda tutulmalıdır.Bu açıdan riskli olgularda pasif immunizasyonda dikkate alınmalıdır. Kişinin tam doz kuduz aşısı mevcutsa yeniden aşılamaya gerek yoktur. Eğer kişi en az 2 doz aşılama yapmış ancak aşılama tablosunu tamamlamamış ise 0 ve 3 günlerde olmak üzere 2 doz aşı ile aşılanmalıdır.

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REFERENCES

1.Madhusudana SN, Malavalli BV, Thankappan UP, Sundra-moorthy S, Belludi AY, Pulagumbaly SB, et al.Development and evaluation of a new immunohis-tochemistry-based test for the detection of rabies virus neutralizing antibodies. Hum Vaccin Immun other 2014;10(5):1359–65.

2.Tayan Y,Oğuzoglu TÇ.Kuduz Enfeksiyonunun moleküler evrimi,çeşitliliği ve coğrafik dağılımı.Etlik Vet Mikrobiol Derg 2018;29(1):89-6.

3.Takayama N.Clinical feature of human rabies.Nippon Rinsho 2005;63:2175-9

4.Hemachudha T, Laothamatas Ji Rıppercht CE. Human rabies:a diseae of complexneuropathogenic mechanism and diagnostic challenges. Lancet Neurol 2002;1:101-5.Greene CE, Rupprecht CE.Rabies and other lyssa virus infections. In: Greene CE, editor. Infectious diseases of the dog and cat. St Louis: Elsevier Saunders; 2006. p.167–83.

6.Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü Zoonotik ve Vektörel Hastalıklar Dairesi Başkanlığı.Kuduz Profilaksi Rehberi 2019. Available at:https://hsgm.saglik.gov.tr/depo/birimler/zoonotik-vektorel-hastaliklar-db/zoonotik-hastaliklar/2-Kuduz/6-Rehbler/Kuduz_Profilaksi_Rehberi.pdf. Accessed December 25, 2022.

7.World Health Organization. Rabies vaccines. Wkly Epidemiol Rec 2002;77:109–19.

8.Otolorin GR, Aiyedun JO, Mshelbwala PP, Ameh VO, DzikwiAA, Dipeolu MA, et al.A review on human deaths associated with rabies in Nigeria. J Vaccines Vaccin 2015;6:262

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