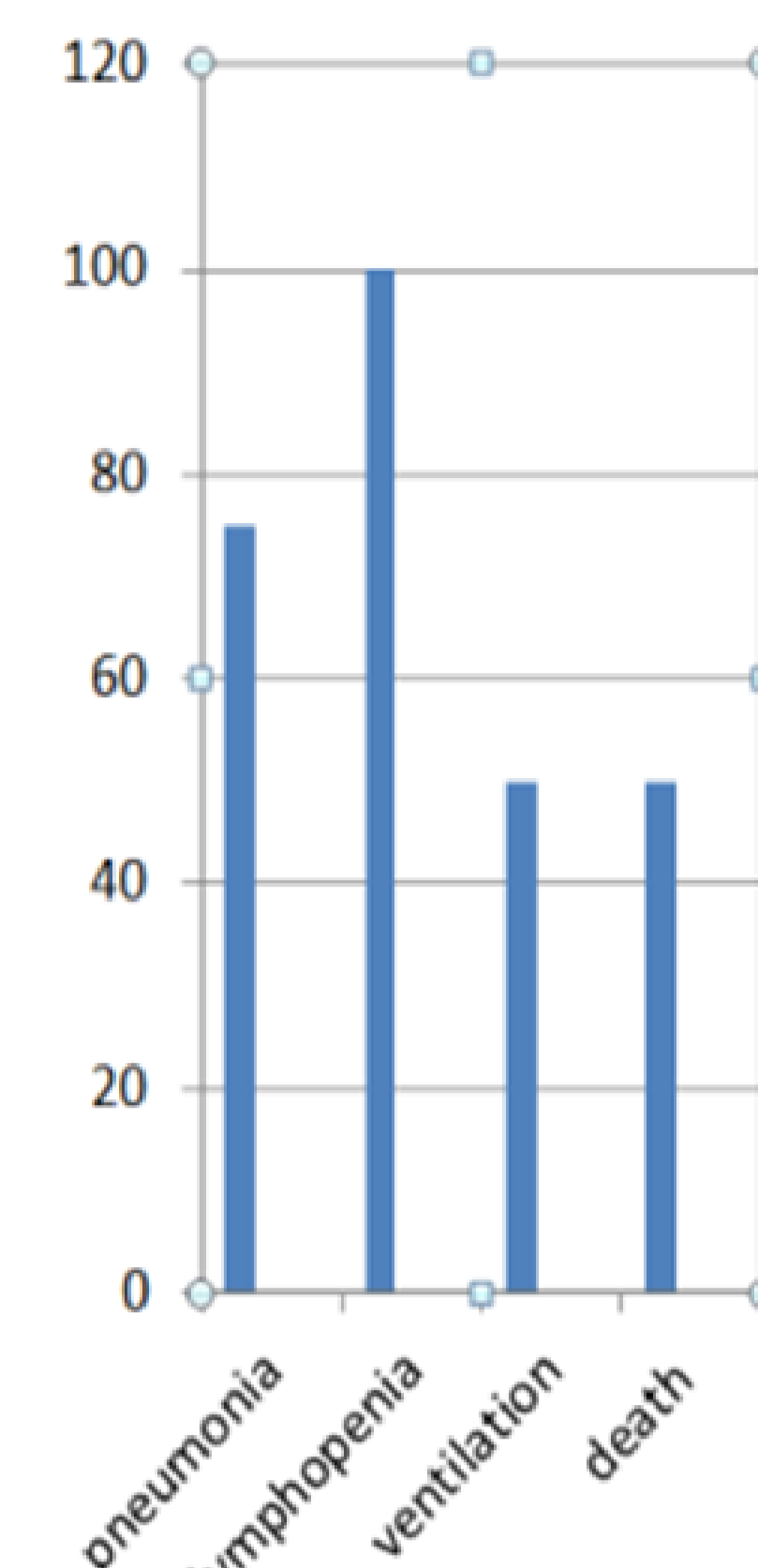
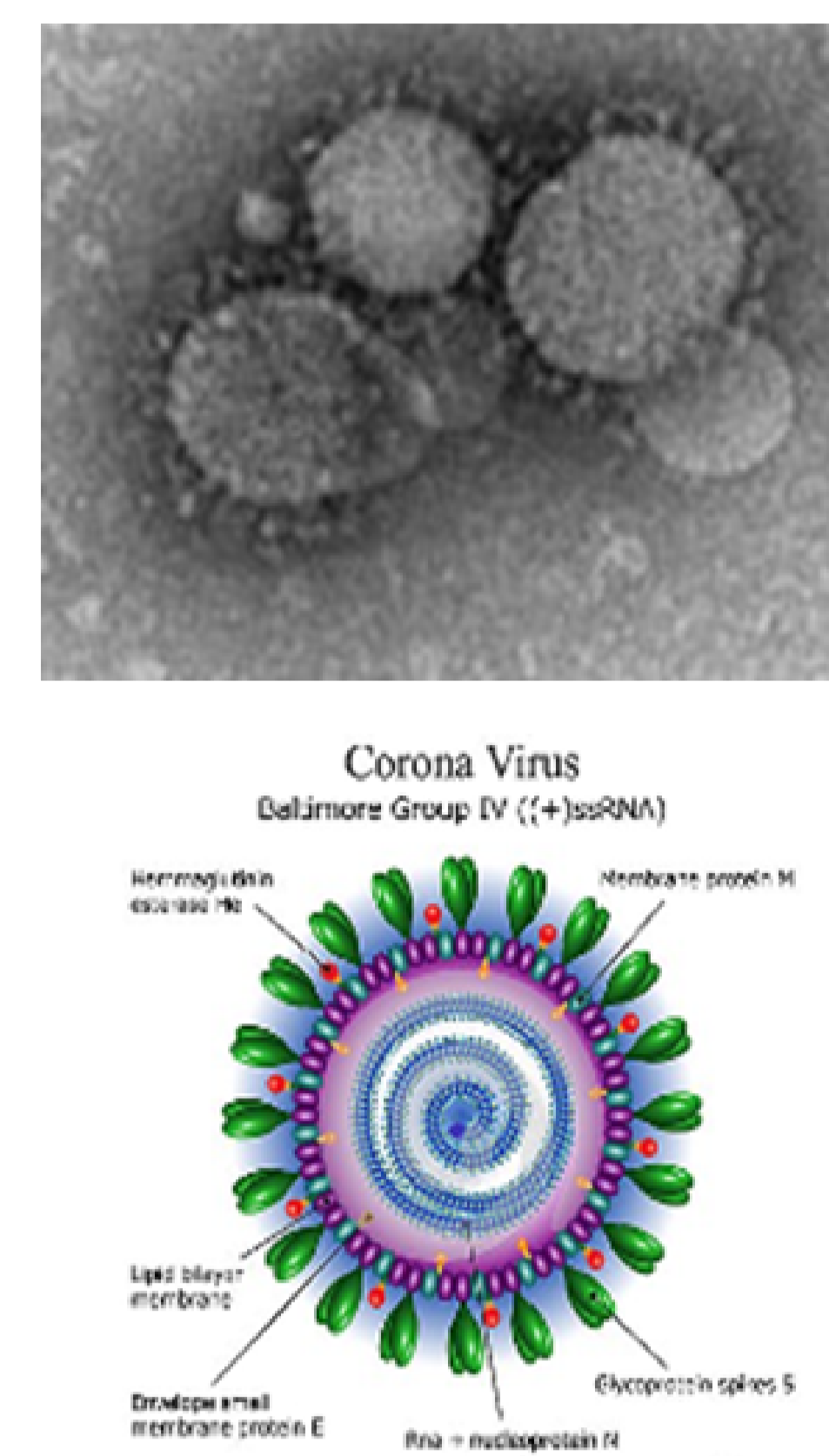


FATE OF MIDDLE EAST RESPIRATORY SYNDROME CORONA VIRUS INFECTION IN FOUR HEMODIALYSIS PATIENTS IN PRINCE SULTAN MILITARY MEDICAL CITY

Ebadur Rahman¹, Mohammed Sulaiman, Muddassar Mahboob, Fahad Hawas, Ghada Shoel, Z Nawaz, S Younis, S Khokhar, Naveed Aslam.
¹Prince Sultan Military Medical City (PSMMC), Riyadh, Saudi

Introduction

Middle East respiratory syndrome corona virus (MERS-CoV) has created global havoc because of its high case fatality rate. The natural history of this infection in hemodialysis (HD) patient has not been studied well. To the best of our knowledge this is the largest single center case series reporting of MERS-CoV infected hemodialysis patient population. These patients were admitted in prince sultan military medical city (PSMCC), nephrology ward and their outcomes are reported in this study.



Material and methods

Four consecutive patients were included in this reporting. All these patients were isolated and diagnosis was made by PCR. Their Clinical presentation, total hospital stay, ventilation requirement and mortality rate was studied. Three serial blood, sputum and urine cultures were done to exclude any possibility of bacterial or fungal sepsis.

Results

Three patients were male, the median age being 51.5 years. All of them were diabetic and hypertensive. Out of 4 infected patients 3 were recently started on HD through permanent catheter with a mean average premorbid duration on dialysis for 64 days. The fourth patient was on dialysis through fistula for 993 days before infection. The average hospital stay was 43 days. 75% presented with pneumonia by clinical and radiological criteria. 100% of them presented with lymphopenia and fever. None of them had associated permanent catheter infection. One of them received intravenous immunoglobulin and was discharged home after 6 weeks and did not require ventilator support during hospital stay. 50% of them needed mechanical ventilator and eventually died due to multiple organ failure. One patient, who had flue like symptoms recovered fully without any intervention but was kept in hospital for 6 weeks until PCR became negative for MERS-CoV.

References

1. de Groot RJ, Baker SC, Baric RS, Brown CS, Drosten C, Enjuanes L, et al. Middle East Respiratory Syndrome Coronavirus (MERS-CoV): Announcement of the Coronavirus Study Group. *J Virol* 2013; 87: 7790-7792.
2. Zaki AM, van Boheemen S, Bestebroer TM, Osterhaus ADME, Fouchier RAM. Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *N Engl J Med* 2012; 367:1814-1820.
3. Assiri A, McGeer A, Perl TM, Price CS, Al Rabeeah AA, Cummings DA, et al. Hospital outbreak of Middle East respiratory syndrome coronavirus. *N Engl J Med* 2013; 369:407-416.
4. Memish ZA, Zumla AI, Al-Hakeem RF, Al-Rabeeah AA, Stephens GM. Family cluster of Middle East respiratory syndrome coronavirus infections. *N Engl J Med* 2013; 368:2487-2494.
5. Al-Ahdal MN, Al-Qahtani AA, Rubino S. Coronavirus respiratory illness in Saudi Arabia. *J Infect Dev Ctries* 2012; 6:692-694.

Progressive changes in Chest X-ray –left upper and lower pictures EM – MERS-CoV –middle picture
% distribution of complications of MERS-CoV infection-left picture

Discussion

In hemodialysis patients the natural history of this viral infection is not studied there fore the comparison of the natural history of this viral infection can be only with the infection related outcomes in general population. Middle East Respiratory Syndrome coronavirus infection is characterized by a spectrum of illness ranging from mild to an acute and fulminant disease. The current case-fatality rate is 58%. The median age of affected individuals is 56 years (range:2-94 years), with a male-to-female ratio of 2.6:1. The best specimen for testing is a lower respiratory tract specimen as nasopharyngeal swabs were negative in a few instances.

Conclusions

MERS-CoV infection in HD patients has prolonged hospital stay and is associated with high mortality, which is indifferent than general population. The patients with milder symptoms have good overall outcome similar to non HD patients. IV Immunoglobulin may improve outcome and should be considered in selected patients till new antivirals are made available.



Dr Ebadur Rahman
FRCP, FASN
MOB 00966554981397 Email: ebadurmr@gmail.com

