|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **YEAR** | **CASES** | **%** | | 2011 | 25 | 16,49 | | 2012 | 19 | 12,83 | | 2013 | 11 | 7,43 | | 2014 | 22 | 14,86 | | 2015 | 12 | 8,10 | | 2016 | 21 | 14,15 | | 2017 | 16 | 10,81 | | 2018 | 6 | 4,05 | | 2019 | 16 | 10,81 | |  |
| Tab 1a | Tab 1b |

Cases divided for year

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **MONTH** | **CASES** | **%** | | January | 12 | 8,10 | | February | 11 | 7,43 | | March | 15 | 10,13 | | April | 14 | 9,45 | | May | 10 | 6,75 | | June | 16 | 10,81 | | July | 12 | 8,10 | | August | 13 | 8,78 | | September | 7 | 4,72 | | October | 15 | 10,13 | | Novembre | 9 | 6,08 | | December | 14 | 9,54 | |  |
| Tab 2a | Tab 2b cases splitted by months of diagnosys |

|  |  |  |
| --- | --- | --- |
| **CAUSES** | **NUMBER OF CASES** | **%** |
| Cataract surgery | 86 | 58,11 |
| Blebitis | 14 | 9,46 |
| Intravitreal Injection | 11 | 7,43 |
| Perforating trauma | 9 | 6,08 |
| Vitrectomy | 7 | 4,73 |
| Endogenous | 4 | 2,70 |
| Corneal suture removal | 3 | 2,03 |
| Endothelial keratoplasty | 2 | 1,35 |
| Corneal abscess | 2 | 1,35 |
| Corneal ulcer | 2 | 1,35 |
| Iris melanoma surgery | 1 | 0,68 |
| Keratotomy wound leak | 1 | 0,68 |
| Silicone oil removal | 1 | 0,68 |
| corneal wound | 1 | 0,68 |
| IOL reposition | 1 | 0,68 |
| Valve tube extrusion | 1 | 0,68 |
| Yag laser Capsulotomy | 1 | 0,68 |
| Abscess on previous keratoplasty | 1 | 0,68 |

TAB 3

Causes of endophthalmitis

Tab.4. Cases related to different microrganisms

|  |  |  |
| --- | --- | --- |
| **MICROORGANISM** | **NUMBER OF CASES** | **%** |
| Staphylococcus epidermidis | 23 | 15,54 |
| Streptococcus pneumoniae | 10 | 6,76 |
| Staphylococcus hominis | 8 | 5,41 |
| Pseudomonas aeruginosa | 5 | 3,38 |
| Streptococcus sanguinis | 5 | 3,38 |
| Staphylococcus aureus | 4 | 2,70 |
| Staphylococcus haemolyticus | 3 | 2,03 |
| Enterococcus faecalis | 2 | 1,35 |
| Escherichia coli | 2 | 1,35 |
| Granulicatella adiacens | 2 | 1,35 |
| Serratia marcescens | 2 | 1,35 |
| Staphylococcus lugdunensis | 2 | 1,35 |
| Streptococcus gordonii | 2 | 1,35 |
| Aspergillus fumigatus | 1 | 0,68 |
| Bifidobacterium species | 1 | 0,68 |
| Candida parapsilosis | 1 | 0,68 |
| Corynebacterium pseudodiphtheriticum | 1 | 0,68 |
| Haemophilus influenzae | 1 | 0,68 |
| Morganella morganii | 1 | 0,68 |
| Staphylococcus lentus | 1 | 0,68 |
| Streptococco oralis and Streptococco mitis | 1 | 0,68 |
| Streptococcus agalatiae and Enterobacter aerogenes | 1 | 0,68 |
| Streptococcus parasanguinis and Neisseria suppurans | 1 | 0,68 |
| Streptococcus pyogenes | 1 | 0,68 |
| Streptococcus viridans | 1 | 0,68 |
| Abiotrophia defectiva | 1 | 0,68 |

|  |  |  |
| --- | --- | --- |
| **MICRORGANISM** | **NUMBER OF CASES** | **%** |
| Staphylococcus epidermidis | 15 | 28,30 |
| Streptococcus pneumoniae | 6 | 11,32 |
| Staphylococcus hominis | 5 | 9,43 |
| Streptococcus sanguis | 5 | 9,43 |
| Pseudomonas aeruginosa | 3 | 5,66 |
| Enterococcus faecalis | 2 | 3,77 |
| Serratia marcescens | 2 | 3,77 |
| Staphylococcus aureus | 2 | 3,77 |
| Staphylococcus haemolyticus | 2 | 3,77 |
| Staphylococcus lugdunensis | 2 | 3,77 |
| Streptococcus gordonii | 2 | 3,77 |
| Aspergillus fumigatus | 1 | 1,89 |
| Candida parapsilosis | 1 | 1,89 |
| Granulicatella adiacens | 1 | 1,89 |
| Morganella morganii | 1 | 1,89 |
| Staphylococcus lentus | 1 | 1,89 |
| Streptococcus oralis ans Streptococcus mitis | 1 | 1,89 |
| Abiotrophia defectiva | 1 | 1,89 |

TAB 5 Cases related to different microrganisms **after cataract surgery**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MICROBES** | **EVS** | **UK** | **NETHERLANDS** | **INDIA** | **INDIA** | **CHINA** | **OUR STUDY (ALL CASES)** | **OUR STUDY (POST-CATARACT SURGERY)** |
| **GRAM-POSITIVE** |  | 93,4 |  |  | 53,1 | 73,9 | 83,5 | 77,8 |
| **CNS** | 70 | 62,3 | 53,6 | 18,6 | 33,3 | 45,5 | 43,5 | 46,3 |
| **S. AUREUS** | 10 | 4,9 | 12 | 11,4 |  | 12,4 | 4,7 | 3,7 |
| **STREPTOCOCCUS SPP** | 9 | 19,6 | 19 | 2,9 | 10,3 | 6,2 | 27,0 | 27,8 |
| **ENTEROCOCCUS SPP** | 2 | 3,3 | 1,8 | 1,4 |  | 7,2 | 2,3 | 3,7 |
| **OTHER GRAM-POSITIVE** | 3 | 3,3 | 5,2 | 10 |  | 2,6 |  |  |
| **GRAM-NEGATIVE** | 6 | 6,6 | 6 | 42 | 26,2 | 13,4 | 15,3 | 18,5 |
| **FUNGAL** |  |  |  | 7,1 | 16,7 | 12,7 | 2,3 | 3,7 |

Tab. 6 Etiology of our endophthalmitis compared with other studies in different countries

|  |  |  |
| --- | --- | --- |
| **WAITING TIME (hours)** | **NUMBER OF CASES** | **%** |
| **< 24** | 108 | 79,41 |
| **> 24, < 48** | 15 | 11,03 |
| **> 48, < 72** | 4 | 2,94 |
| **> 72** | 9 | 6,62 |

Tab 7a patients divided for waiting time from Emergency Department admission and vitrectomy

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR** | **WAITING TIME (hours)** | **NUMBER OF CASES** | **%** |
| **2011** | < 24 | 12 | 8,82 |
| > 24, < 48 | 5 | 3,68 |
| > 48, < 72 | 2 | 1,47 |
| > 72 | 5 | 3,68 |
| **2012** | < 24 | 8 | 5,88 |
| > 24, < 48 | 6 | 4,41 |
| > 48, < 72 | 2 | 1,47 |
| **2013** | < 24 | 10 | 7,35 |
| **2014** | < 24 | 21 | 15,44 |
| > 24, < 48 | 1 | 0,74 |
| **2015** | < 24 | 10 | 7,35 |
| > 24, < 48 | 1 | 0,74 |
| **2016** | < 24 | 14 | 10,29 |
| > 24, < 48 | 2 | 1,47 |
| > 72 | 3 | 2,21 |
| **2017** | < 24 | 14 | 10,29 |
| > 72 | 1 | 0,74 |
| **2018** | < 24 | 5 | 3,68 |
| **2019** | < 24 | 14 | 10,29 |

Tab 7b

Patients divided for waiting time from Emergency Department admission and vitrectomy and for years

|  |  |
| --- | --- |
| **DAYS** | **MEAN VA INCREASE** |
| 0 | 3,74 ± 3,02 |
| 1 | 2,1 ± 2,01 |
| 2 | 0,5 ± 0,96 |
| 3 | 0,34 ± 0,25 |
| 5 | 0,16 ± 0,26 |
| more | 0 |

TAB. 8 Relationship between waiting time from admission to vitrectomy and visual improvement

FIG. 8

|  |  |
| --- | --- |
| **DAYS** | **MEAN VA INCREASE** |
| 0 | 3,97 ± 2,93 |
| 1 | 2,42 ± 2,04 |
| 2 | 0,67 ± 1,10 |
| 3 | 0,27 ± 0,31 |

TAB. 9 Relationship between waiting time from admission to vitrectomy and visual improvement **after cataract surgery**

FIG. 9

|  |  |  |
| --- | --- | --- |
| **PATIENTS OPERATED BEFORE 24 HOURS** | | |
| **VA INCREASE ( SNELLEN )** | **% OF PATIENTS** |
| 9 | 1,03 |
| 8 | 8,25 |
| 7 | 6,19 |
| 6 | 9,28 |
| 5 | 10,31 |
| 4 | 13,40 |
| 3 | 8,25 |
| 2 | 8,25 |
| 1 | 6,19 |
| <1 | 13,40 |
| 0 | 15,46 |

TAB 10 Percentage of patients underwent vitrectomy before 24 hours with visual improvement.

|  |  |
| --- | --- |
| **MEAN VA INCREASE** | **MEAN DAYS FROM ADMISSION**  **TO VITRECTOMY** |
| >5 | 0 |
| 4 | 0,08 ± 0,08 |
| 3 | 0,3 ± 0,3 |
| 2 | 0 |
| 1 | 0,5 ± 0,83 |
| <1 | 0,65 ± 1,03 |
| 0 | 0,14 ± 3,02 |

TAB. 12 Visual acuity improvement correlation to vitrectomy delay

FIG. 12

|  |  |  |
| --- | --- | --- |
| **MICROORGANISM** | **VISUAL ACUITY INCREASE** | ***P*** |
| Staphylococcus epidermidis | 4,20 ± 2,66 | 0,257 |
| Staphylococcus hominis | 1,90 ± 2,06 | 0,051 |
| Streptococcus pneumoniae | 3,99 ± 3,16 | 0,433 |
| Streptococcus sanguinis | 1,81 ± 2,47 | 0,059 |

Tab.13

Correlation between visual impairment and type of microorganism