1. **RESULTS**

***AGE DISTRIBUTION*:** This study involves a sample size of 151 patients. Out of them, the most common age group was found to be 51-60 which is 31.8%.

|  |  |  |
| --- | --- | --- |
| **Age Groups (in years)** | **Number of Patients (n=151)** | **Percentage (%)** |
| <30 | 1 | 0.6 |
| 31-40 | 7 | 4.6 |
| 41-50 | 31 | 20.6 |
| 51-60 | 48 | 31.8 |
| 61-70 | 37 | 24.5 |
| 71-80 | 27 | 17.9 |

***TABLE 1*-** Age distribution

***GENDER DISTRIBUTION***: Among the 151 patients, 56% were male and 44% are female. Males were more affected by CAD than females.

***TABLE 2* –** Gender Distribution

|  |  |  |
| --- | --- | --- |
| **Gender** | **No of patients**  **(n=151)** | **Percentage(%)** |
| Male | 84 | 55.6 |
| Female | 67 | 44.4 |

***OCCUPATION DISTRIBUTION:***

Below is the occupation distribution of the patients presented with CAD.

***TABLE 3* –** Occupation Distribution

|  |  |  |
| --- | --- | --- |
| **Occupation** | **NO OF PATIENTS IN EACH RANGE (n=151)** | **PERCENTAGE(%)** |
|
| Agriculture | 29 | 19.24 |
| Business | 15 | 9.93 |
| Chief pharmacist | 1 | 0.66 |
| Clerk | 2 | 1.32 |
| Driver | 6 | 3.97 |
| Electrician | 2 | 1.32 |
| ex-serviceman | 1 | 0.66 |
| Housewife | 65 | 43.05 |
| IT engineer | 1 | 0.66 |
| Mechanic | 1 | 0.66 |
| Office Assistant | 1 | 0.66 |
| Plumber | 1 | 0.66 |
| Retired | 9 | 5.98 |
| Shopkeeper | 1 | 0.66 |
| Student | 1 | 0.66 |
| Tailor | 2 | 1.32 |
| Teacher | 4 | 2.65 |
| Watchman | 2 | 1.32 |
| Worker | 7 | 4.62 |

***COMORBIDITY DISTRIBUTION:*** Various comorbidities associated with CAD are shown in *Table 4*. Hypertension (61.5%) was the most common comorbid condition associated with CAD.

***TABLE 4* -** Comorbidity distribution

|  |  |  |
| --- | --- | --- |
| **Comorbidities** | **Number of patients (n=151)** | **Percentage (%)** |
| Hypertension | 29 | 19.21 |
| Hypertension + Others (Asthma, Previous CAD, CKD, Hypothyroidism) | 19 | 12.58 |
| Hypertension + Diabetes | 27 | 17.88 |
| Hypertension + Diabetes + Others (Anaemia, Asthma, Previous CAD, TB, Hypothyroidism) | 18 | 11.92 |
| Diabetes | 13 | 8.61 |
| Diabetes + Others (TB, Hypothyroidism, AKI, Previous CAD) | 14 | 9.27 |
| Others (Asthma, COPD, Previous CAD, TB, Hypothyroidism) | 10 | 6.62 |
| No comorbidities known previously | 21 | 13.91 |

**(CKD –** Chronic Kidney Disease, **AKI** – Acute Kidney Injury, **TB** – Tuberculosis, **COPD** – Chronic Obstructive Pulmonary Disease)

***AVERAGE NUMBER OF DRUGS PER PRESCRIPTION:*** Below table shows the average number of drugs prescribed to the patients presented with CAD.

***TABLE 5 –*** Number of drugs per prescription

|  |  |  |
| --- | --- | --- |
| **NO OF DRUGS PER PRESCRIPTION** | **NO OF PATIENTS IN EACH RANGE (n=151)** | **PERCENTAGE(%)** |
| 4 | 7 | 4.64 |
| 5 | 12 | 7.95 |
| 6 | 17 | 11.26 |
| 7 | 25 | 16.56 |
| 8 | 21 | 13.91 |
| 9 | 16 | 10.60 |
| 10 | 17 | 11.26 |
| 11 | 13 | 8.61 |
| 12 | 7 | 4.64 |
| 13 | 9 | 5.96 |
| 14 | 5 | 3.31 |
| 16 | 1 | 0.66 |
| 18 | 1 | 0.66 |

***NUMBER OF PRESCRIPTIONS WITH ANTIBIOTICS:*** Below table shows the number of patients prescribed antibiotics.

***TABLE 6* –** Antibiotics distribution pattern

|  |  |  |
| --- | --- | --- |
| **PRESCRIPTION** | **NUMBER OF PATIENTS (n=151)** | **PERCENTAGE (%)** |
| With Antibiotics | 34 | 22.51 |
| Without Antibiotics | 117 | 77.49 |

***NUMBER OF PRESCRIPTIONS WITH GENERIC DRUGS:*** Below table shows the number of patients prescribed generic drugs.

***TABLE 7 –*** Nature of Prescriptions

|  |  |  |
| --- | --- | --- |
| **NATURE OF PRESCRIPTIONS** | **NO OF PRESCRIPTIONS (n=151)** | **PERCENTAGE (%)** |
| Prescriptions containing only generic drugs | 4 | 2.64 |
| Prescriptions containing both generic drugs & trade names | 147 | 97.36 |

***NUMBER OF PRESCRIPTIONS WITH GENERIC DRUGS:*** Below table shows the distribution of generic and non-generic drugs prescribed in total.

***TABLE 8 –*** Generic drug prescription pattern

|  |  |  |
| --- | --- | --- |
| **Drug Type** | **NO OF DRUGS (n=1295)** | **PERCENTAGE (%)** |
| Generic Drug | 509 | 39.31 |
| Non-Generic Drug | 786 | 60.69 |

***NUMBER OF PRESCRIPTIONS WITH INJECTIONS:*** Below table shows the distribution of prescriptions with injections.

***TABLE 9* –** Injection Prescription pattern

|  |  |  |
| --- | --- | --- |
| **DRUG FORMULATION** | **NO OF DRUGS (n=1295)** | **PERCENTAGE (%)** |
| Injections | 202 | 15.59 |
| Without injections | 1093 | 84.41 |

***COST DISTRIBUTION OF DRUGS:*** Below table shows the cost distribution of drugs prescribed to the patients.

***TABLE 10* –** Cost distribution of drugs

|  |  |  |
| --- | --- | --- |
| **Drug Cost** | **No of drugs (n=1295)** | **PERCENTAGE (%)** |
| Free drugs | 903 | 69.72 |
| Paid drugs | 392 | 30.28 |

***TABLE 11* –** Drug UseIndicators

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Drug use indicators** | **Result** | **WHO Standard** |
| **1** | Average number of drugs per prescription | 8.57 | 1.6 - 1.8 |
| **2** | Percentage of encounters with Antibiotics prescribed | 22.51% | 20.0% - 26.8% |
| **3** | Percentage of drugs prescribed by generic name | 39.31% | 100% |
| **4** | Percentage of encounters with Injections prescribed | 15.59% | 13.4% - 24.1% |
| **5** | Percentage of drugs prescribed from the National Essential drug list | 85.71% | 100% |

***ATC- PDD/DDD Classification:*** Below table shows the Prescribed Daily Dosage (PDD) against the Defined Daily Dosage (DDD) for the drugs prescribed to the patients.

***TABLE 12* - ATC- PDD/DDD CLASSIFICATION:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **DRUG** | **ATC** | **PDD** | **DDD** | **PDD/DDD** |
| Isosorbide di nitrate | C01DA08 | 23.72 | 60mg O | 0.395 |
| Isosorbide mono nitrate | CO1DA14 | 20 | 40mg O | 0.5 |
| Glyceryl tri nitrate | CO1DA02 | 5.525 | 5mg O | 1.10 |
| Ranolazine | C01EB18 | 1000 | 1500mg O | 0.66 |
| Trimetazidine | C01EB15 | 45 | 40mg O | 1.125 |
| Aspirin | B01AC06 | 1 tablet | 1tablet O | 1 |
| Clopidogrel | B01AC04 | 75 | 75mg O | 1 |
| Heparin | B01AB01 | 15000 | 10000 U | 1.5 |
| Enoxaparin | B01AB05 | 8000 | 2000 U | 4 |
| Warfarin | B01AA03 | 5 | 7.5mg O | 0.66 |
| Enalapril | C09AA02 | 6.17 | 10mg O | 0.61 |
| Metoprolol (O) | C07AB02 | 16.761 | 150 mg O | 0.11 |
| Amlodipine | C08CA01 | 8.333 | 5mg O | 1.66 |
| Atenolol | C07AB03 | 45.83 | 75mg O | 0.611 |
| Telmisartan | C09CA07 | 53.33 | 40mg O | 1.33 |
| Atorvastatin | C10AA05 | 24.96 | 10mg O | 2.496 |
| Rosuvastatin | C10AA07 | 20 | 10mg O | 2 |
| Fenofibrate | C10AB05 | 145 | 200mg O | 0.725 |
| Furosemide (0) | C03CA01 | 39.09 | 40mg O | 0.977 |
| Furosemide (P) | C03CA01 | 54 | 40mg P | 1.35 |
| Spironolactone | C03DA01 | 55 | 75mg O | 0.733 |
| Torsemide | C03CA04 | 11 | 15mg O | 0.733 |
| Carvedilol | C07AG02 | 5.0781 | |  |  |  | | --- | --- | --- | | 37.5 mg O |  |  | | 0.13 |
| Digoxin (0) | C01AA05 | 0.23 | 0.25mg O | 0.92 |
| Nicorandil | C01DX16 | 7.5 | 40mg O | 0.18 |
| Trimetazidine | C01EB15 | 40 | 40mg O | 1 |
| Metformin | A10BA02 | 1044 | 2000 mg | 0.522 |
| Glimepiride | A10BA12 | 2.1764 | 2 mg O | 1.08 |

***DRUG TYPE DISTRIBUTION:*** The drug type distribution has been illustrated in *Table 13*. The patients have been prescribed various drugs namely anti-hypertensive, anti-anginal, anti-platelet, anti-coagulant, anti-diabetic, hypolipidemic, and diuretics.

***TABLE 13* –** Drug Type distribution pattern

|  |  |  |
| --- | --- | --- |
| **Drug Type Distribution** | **Number of prescriptions (n=151)** | **PERCENTAGE (%)** |
| Anti-Hypertensive drugs | 93 | 61.59 |
| Anti-Anginal drugs | 75 | 49.67 |
| Anti-Platelet drugs | 146 | 96.69 |
| Anti-Coagulant drugs | 44 | 29.14 |
| Drugs used in Heart failure | 69 | 45.70 |
| Anti-Diabetic drugs | 72 | 47.68 |
| Hypolipidemic drugs | 140 | 92.72 |

***PRESCRIPTION PATTERN OF ANTI-PLATELET DRUGS:*** *Table 14* provides the Anti-Platelet drugs prescription pattern. 52.06 percent of the patients have received prescriptions for both aspirin and clopidogrel.

***TABLE 14* –** Prescription Pattern of Anti-Platelets**:**

|  |  |  |
| --- | --- | --- |
| **Anti-platelets** | **No of patients**  **(n=146)** | **Percentage(%)** |
| Aspirin alone | 55 | 37.67 |
| Clopidogrel alone | 15 | 10.27 |
| Aspirin + clopidogrel | 76 | 52.06 |

***PRESCRIPTION PATTERN OF ANTI-COAGULANT DRUGS:*** *Table 15* shows the Anti-Coagulants prescription pattern. Low molecular weight Heparin was prescribed for 50% of the patients.

***TABLE 15*** – Prescription Pattern of Anti-Coagulants**:**

|  |  |  |
| --- | --- | --- |
| **Anti-Coagulants** | **No of Patients(n=44)** | **Percentage(%)** |
|  |
| Heparin | 21 | 47.73 |  |
| Enoxaparin | 22 | 50.00 |  |
| Warfarin + Heparin | 1 | 2.27 |  |

***PRESCRIPTION PATTERN OF HYPOLIPIDEMIC DRUGS:*** *Table 16* shows the pattern in the prescription of hypolipidemic drugs. Atorvastatin was predominantly prescribed to 93.57% of the patients.

***TABLE 16*** – Prescription Pattern of Hypolipidemic Drugs**:**

|  |  |  |
| --- | --- | --- |
| **Hypolipidemic** | **No of Patients(n=140)** | **Percentage(%)** |
|  |
| Atorvastatin | 131 | 93.57 |  |
| Rosuvastatin | 7 | 5.00 |  |
| Atorvastatin + Fenofibrate | 2 | 1.43 |  |

***PRESCRIPTION PATTERN OF ANTI-ANGINAL DRUGS:***Isosorbide dinitrate was the most commonly prescribed Anti-anginal drug which accounts for 68% of the patients as shown in *Table 17.*

***TABLE 17* –** Prescription Pattern of Anti-anginal Drugs:

|  |  |  |
| --- | --- | --- |
| **Anti-anginal drugs** | **No of Patients(n=75)** | **Percentage(%)** |
| Isosorbide dinitrate | 51 | 68.00 |
| Isosorbide mononitrate | 1 | 1.33 |
| Nitroglycerine | 8 | 10.67 |
| Ranolazine | 1 | 1.33 |
| Trimetazidine | 5 | 6.67 |
| Nicorandil | 6 | 8.00 |
| Ivabradine | 3 | 4.00 |

***PRESCRIPTION PATTERN OF DRUGS IN HEART FAILURE ASSOCIATED WITH CAD:***The pattern of Heart Failure Drugs prescription is shown below in *Table 18*. Furosemide was prescribed to 60.8%% of the patients.

***TABLE 18* –** Prescription Pattern of Drugs in Heart Failure**:**

|  |  |  |
| --- | --- | --- |
| **Heart failure drugs** | **No of Patients(n=69)** | **Percentage(%)** |
| Parenteral Furosemide | 20 | 28.99 |
| Oral Furosemide | 22 | 31.88 |
| Oral spironolactone | 10 | 14.49 |
| Oral Torsemide | 3 | 4.35 |
| Carvedilol | 6 | 8.70 |
| Digoxin | 6 | 8.70 |
| Carvedilol + Digoxin | 2 | 2.90 |

***PRESCRIPTION PATTERN OF ANTI-HYPERTENSIVE DRUGS:*** *Table 19* depicts the pattern of Anti-hypertensive drug prescriptions. ACE Inhibitors were prescribed to 80.6% of the patients.

***TABLE 19*** Prescription Pattern of Anti-Hypertensive Drugs**:**

|  |  |  |
| --- | --- | --- |
| **Anti-hypertensive drugs** | **No of Patients(n=93)** | **Percentage(%)** |
| ACE Inhibitors + Beta blockers | 27 | 29.03 |
| ACE inhibitors alone | 41 | 44.09 |
| Beta blocker alone | 3 | 3.23 |
| ARB alone | 2 | 2.15 |
| ARB + beta blockers | 2 | 2.15 |
| ARB +calcium channel blockers | 5 | 5.38 |
| Calcium channel blockers alone | 4 | 4.30 |
| ACE + calcium channel blockers | 4 | 4.30 |
| ACE + Beta blocker + Calcium channel blocker | 3 | 3.23 |
| Calcium channel blockers+ARB+Diuretic | 1 | 1.08 |
| ARB+calcium channel blocker+beta blocker | 1 | 1.08 |

***PRESCRIPTION PATTERN OF ANTI-DIABETIC DRUGS:*** *Table 20* illustrates the pattern of Anti-diabetic drug prescriptions. 65.29% of the patients have been prescribed Metformin.

***TABLE 20* –** Prescription Pattern of Anti-Diabetic**:**

|  |  |  |
| --- | --- | --- |
| **Anti-Diabetic** | **No of Patients(n=72)** | **Percentage(%)** |
| Dapagliflozin + Glimepiride + Metformin + Vildagliptin | 1 | 1.39 |
| Dapagliflozin only | 1 | 1.39 |
| Glibenclamide + Metformin | 1 | 1.39 |
| Gliclazide + Metformin | 1 | 1.39 |
| Glimepiride + Metformin | 12 | 16.67 |
| Glimepiride + Metformin + Pioglitazone + Voglibose | 1 | 1.39 |
| Glimepiride + Metformin + Teneligliptin | 1 | 1.39 |
| Glimepiride + Metformin + Voglibose | 2 | 2.78 |
| Glipizide + Metformin | 2 | 2.78 |
| Insulin | 22 | 30.56 |
| Insulin + Dapagliflozin | 1 | 1.39 |
| Insulin + Glimepiride + Metformin | 1 | 1.39 |
| Insulin + Glimepiride + Metformin + Voglibose | 1 | 1.39 |
| Insulin + Metformin | 1 | 1.39 |
| Insulin + Vildagliptin | 1 | 1.39 |
| Metformin Only | 23 | 31.94 |

***PRESCRIPTION PATTERN OF ANTIBIOTICS:***The prescription pattern of Antibiotics has been depicted in *Table 21*. Cephalosporins have been prescribed to 58.13% of the patients.

***TABLE 21* –** Prescription Pattern of Antibiotics**:**

|  |  |  |
| --- | --- | --- |
| **Antibiotic drugs** | **No of Patients(n=43)** | **Percentage(%)** |
| Macrolide Antibiotics | 5 | 11.62 |
| Nitroimidazoles | 4 | 9.30 |
| Nitrofuran Antibiotics | 2 | 4.65 |
| Penicillin antibiotics | 4 | 9.30 |
| Fluoroquinolones | 3 | 7 |
| Cephalosporins | 25 | 58.13 |

***PRESCRIPTION PATTERN OF MISCELLANEOUS DRUGS:*** *Table 22* depicts the pattern at which miscellaneous drugs were prescribed to the patients.

***TABLE 22* –** Prescription Pattern of Miscellaneous Drugs**:**

|  |  |  |
| --- | --- | --- |
| **Miscellaneous Drugs** | **No of Patients (n=151)** | **Percentage(%)** |
| Vitamins (B-Complex, Calcium, FST, Vitamin C) | 70 | 46.36 |
| Proton pump Inhibitors | 47 | 31.13 |
| H2 Blockers | 55 | 36.42 |
| Antacid | 13 | 8.61 |
| Laxatives (Lactulose, Bisacodyl, Liquid Paraffin, Milk of Magnesia) | 41 | 27.15 |
| Benzodiazepines | 36 | 23.84 |
| NSAIDS | 8 | 5.30 |
| 5-HT3 Antagonist | 17 | 11.26 |
| Bronchodilators | 15 | 9.93 |
| Thyroxine | 14 | 9.27 |
| Anti-Histamine | 8 | 5.30 |

***TABLE 23***– ANTIHYPERTENSIVES IN PATIENTS WITH CAD WITHOUT CO-MORBIDITY:

Below table shows the patients with prescription of antihypertensives for CAD even without hypertension as comorbidity.

|  |  |  |  |
| --- | --- | --- | --- |
| **S.no** | **Antihypertensives** | **No of Patients (N=34)** | **PERCENTAGE(%)** |
| 1 | ACE inhibitors alone | 12 | 35.29 |
| 2 | ACE inhibitors + Betablockers | 20 | 58.82 |
| 3 | Betablockers | 2 | 5.89 |