A District Wide ACS Dataset

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Introduction: The ECG is the initial diagnostic tool in the management of Acute Coronary Syndrome. The ability for expert review over large distances has been challenging for Cardiology services. The ability to store and review ECG for clinical changes over time has also been problematic. Hunter New England Local Health District (HNELHD) collects over 70,000 ECG per annum via 28 hospitals across an area the size of England.

Objectives: To develop a District wide ECG collection and storage system where download and review of ECG across all facilities is possible within a very short time interval.

Method: A collaborative team with representatives from Information Technology, Cardiology, the ECG company (Mindray) and led by Biomedical Engineering was established. Seventy-five ECG machines were purchased with bar-code scanning to allow immediate and complete patient identification. The ECG devices were placed in all 28 Emergency departments in HNELHD. All were connected to the Districts wireless network and set to automatically download into a central storage system.

Results: All hospitals in HNELHD are now able to undertake immediate review of Patients’ ECG regardless of collection facility. Patients’ serial ECG are able to be assessed by Heart Failure management (New, known or suspected) (13%), interpretation of incidentally raised troponins (12%), medication management (15%) and interpretation of raised inflammation biomarkers (14%). From the medical teams, the most common referrals were orthopaedics (21%), gastroenterology (12%). Surgical specialties constituted (37%) of consults, most commonly Geriatrics (16%) and Pulmonology (16%), followed by Nephrology (14%), General Medicine (13%) and General Surgery (13%). Subspecialties constituted (62%) of consults, most commonly Geriatrics (16%) and Pulmonology (16%), followed by Nephrology (14%), General Medicine (13%) and General Surgery (13%).

Conclusion: The levels of specific microRNAs elevated in ACS returned to levels similar to control individuals with colchicine therapy. These microRNAs may mediate ACS via inflammatory pathways or increase post-ACS risk, and could be potentially used as biomarkers of treatment efficacy in ACS.

A MicroRNA Signature Modulated by Colchicine in Acute Coronary Syndrome Patients

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Background: Circulating microRNAs (miRNAs) may play a pathogenic role in acute coronary syndromes (ACS). We simultaneously profiled miRNA levels across three sites in ACS patients treated with standard therapy or with standard therapy and colchicine 6-24 hrs prior to angiography.

Methods: 754 miRNAs were quantified by TaqMan™ real-time polymerase chain reaction from EDTA-plasma in a discovery cohort of 15 patients (N=3 controls, N=6 ACS standard therapy, N=6 ACS standard therapy plus colchicine). Expression levels of circulating miRNAs from the discovery cohort were analysed using ANOVA across groups to identify a set of 51 most differentially regulated miRNAs (P<0.01). These 51 miRNAs formed our custom panel, to assess expression of these selected miRNAs in a validation cohort of 92 patients (N=13 controls, N=40 ACS standard therapy, N=39 ACS standard therapy plus colchicine). Plasma samples were simultaneously obtained from the coronary sinus, aortic root and right atrium of all study participants.

Results: Thirty miRNAs were higher in ACS standard therapy patients compared to controls (fold change >1.5; P<0.05). Interestingly, seven of these miRNAs higher in ACS returned to levels seen in control subjects after colchicine treatment (fold change >1.5; P<0.05). Three of these miRNAs were identified as key regulators in inflammatory pathways. In both cohorts, miRNAs were comparable across sampling sites.

Conclusion: The levels of specific microRNAs elevated in ACS returned to levels similar to control individuals with colchicine therapy. These microRNAs may mediate ACS via inflammatory pathways or increase post-ACS risk, and could be potentially used as biomarkers of treatment efficacy in ACS.

A Prospective Audit of Inpatient Cardiology Consults in a Major Tertiary Centre

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There is paucity of data regarding the inpatient consults service provided by cardiology units despite its importance. A prospective audit with all consecutive formal consults performed by the primary authors (292 patients) were audited over three separate months and grouped into referral indications.

There was an average of 100 consults per month. Medical subspecialties constituted (62%) of consults, most commonly Geriatrics (16%) and Pulmonology (16%), followed by Nephrology (14%), General Medicine (13%) and Gastroenterology (12%). Surgical specialties constituted (37%) of consults, most commonly by Vascular Surgery (23%), Orthopaedics (21%) and Cardiothoracic (12%).

Across the spectrum, atrial fibrillation management (new or known) was the most common referral (16%), followed by Heart Failure management (New, known or suspected) (13%), interpretation of incidentally raised troponins (12%), preoperative assessment (10%) and medication management (inc. antithrombotics) (9%). From the medical teams, the most common referrals were heart failure management (18%), medication management (15%) and interpretation of raised