

# IMAJ "Bat Mitzvah" year: Highlights of 2010–2011

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The *Israel Medical Association Journal*, commonly known as IMAJ, is the successor of the *Israel Journal of Medical Sciences* that was initiated in 1965 by Prof. Moshe Prywes. As IMAJ approaches the end of its 12th year of publication – its Bat Mitzvah\* – its impact on the scientific and medical communities in Israel and abroad is well established.

IMAJ publishes articles from Israel as well as from countries around the world, but the cardinal purpose of this Journal is to open a window to the world, showcasing Israeli medical and scientific research. The effect of IMAJ is reflected in the rising impact factor attributed to the Journal, which reached 0.95 in July 2011. The articles published in IMAJ are varied, with topics ranging from internal medicine, including heart and lung diseases, to cancer, infectious diseases, vaccinology, autoimmunity and more. The Journal serves as a stage for research, involving the special demography of Israel with its diverse minorities and different genetic origins.

This article highlights some papers on infectious diseases, vaccination and autoimmunity. Altogether forty papers are cited, published during 2010 and 2011 [1–40].

## INFECTIOUS DISEASES

### BRUCELLOSIS

The majority of human brucellosis cases in Israel are caused by the ingestion of unpasteurized dairy foods produced from unlicensed family-owned flocks whose products are sold door-to-door at low prices. Exposure to infected farm animals is another major cause of infection. An incidence decline of almost 70% during the period 1998–2002 was followed by a return to previously existing levels, although the incidence has remained consistently lower than in past decades. The disease is mostly limited to certain sectors of the rural Arab population. In 2009 the incidence rate per 100,000 population was 7.0 among Arabs

compared to 0.2 among Jews. Between 1998 and 2009, 63% of cases were from the Beer Sheva and Acre health districts, which together comprise 15.5% of the Israeli population. Control programs – including efforts to combat brucellosis in animals and to discourage the sale of unpasteurized homemade dairy products – have met with partial success [3].

### CLOSTRIDIUM DIFFICILE

The rate of infection with *Clostridium difficile* colitis and its associated mortality have increased in the last decade. However, the molecular epidemiology of *C. difficile* in Israel has not been studied. Polymerase chain reaction strain typing of *C. difficile* isolates yielded approximately 26 unique ribotypes. During the first study period, ribotype A and B accounted for 30% and 28%, respectively, whereas ribotype E and K accounted for 6.5% for each. During the second study period, ribotypes A, E and K disappeared, and the incidence of ribotype B decreased from 28% to 15%. One isolate (1/20, 5%) emerged during the second period and was identified as ribotype 027. Moxifloxacin resistance was found in 93% of ribotype A isolates, 81% of the ribotype B group, and in 44% of other ribotypes [5].

### HUMAN PAPILLOMAVIRUS

Concomitant human immunodeficiency virus and human papillomavirus infection increase both HPV persistence and the risk of invasive cervical cancer. An estimation of HPV prevalence among HIV-positive women in Israel would contribute to improving care for this population and preventing morbidity and mortality related to cervical cancer. The aim of this study was to determine the prevalence of HPV infection and cervical cytology abnormalities, and to assess the possible influence of HIV infection on HPV carriage in HIV-positive women attending the Infectious Disease Clinic at Soroka University Hospital. The prevalence of HPV carriage among HIV-positive woman in this study was slightly higher than published elsewhere. The prevalence of pathological cervical cytology was much higher than in the general population. An extremely high prevalence of pathological colposcopies requiring further treatment was found. Screening for HPV and premalignant changes in the uterine cervix is highly recommended in the HIV-seropositive population [21].

\*Bat Mitzvah is the Jewish coming of age of 12 year old girls; boys celebrate their Bar Mitzvah at age 13

HPV = human papillomavirus  
HIV = human immunodeficiency virus

### METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS*

Community-associated methicillin-resistant *Staphylococcus aureus* infections are increasingly being documented worldwide. In Israel, however, CA-MRSA infections have not yet been reported, so awareness among physicians may be low. In three cases CA-MRSA was identified as the causative pathogen after surgical or spontaneous drainage. On susceptibility testing, the organisms were resistant to beta-lactam antibiotics but susceptible to clindamycin, rifampicin and trimethoprim-sulfamethoxazole. The antibiotic-resistance profile of *S. aureus* should be watched carefully, and in particular, cultures should be obtained whenever soft tissue infections fail to respond to conventional treatment [27].

### ROTAVIRUS

Diarrhea is a leading cause of child mortality worldwide. Rotavirus is one of the most common causes of severe diarrhea and dehydration in children. Perl et al. [31] compared the demographic, clinical and laboratory characteristics of patients with rotavirus gastroenteritis to those of patients with other causes of gastroenteritis. The study group comprised 533 patients; 202 tested positive for rotavirus and 331 tested negative. Compared to patients with rotavirus-negative gastroenteritis, patients with rotavirus-positive gastroenteritis had a higher incidence of vomiting (185/202 vs. 212/331, 92% vs. 64%,  $P < 0.001$ ), lethargy (67/202 vs. 51/331, 33% vs. 15%,  $P < 0.001$ ) and dehydration (81/202 vs. 78/331, 40% vs. 24%,  $P < 0.001$ ). The need for intravenous rehydration therapy and the duration of hospitalization were higher in patients with rotavirus gastroenteritis.

### LEISHMANIASIS

The incidence of cutaneous leishmaniasis in northern Israel began to rise in 2000, peaking at 41.0 per 100,000 in the Kinneret subdistrict during the first half of 2003. Vinitzki and co-authors [39] examined the morbidity rates of cutaneous leishmaniasis in northern Israel during the period 1999–2003, which would indicate whether new endemic areas were emerging in this district, and identified suspicious hosts. The maximal incidence rate in the district was found in the city Tiberias in 2003: 62.5/100,000 compared to 0–1.5/100,000 in other towns. The cases in Tiberias were concentrated on the peripheral line of two neighborhoods, close to the habitats of the rock hyraxes. Sand flies infected with *Leishmania tropica* were captured around the residence of those affected. Results of polymerase chain reaction were positive for *L. tropica* in 14 of 15 tested patients.

### STREPTOCOCCUS PNEUMONIAE

*Streptococcus pneumoniae* is now the predominant pathogen causing meningitis. The resistance of *S. pneumoniae* to penicillin and third-generation cephalosporins has grown steadily.

CA-MRSA = community-associated methicillin-resistant *Staphylococcus aureus*

The rate of penicillin resistance is high in children with *S. pneumoniae* meningitis in Israel, especially in those treated with oral antibiotics prior to hospitalization. Resistance to ceftriaxone is infrequent though not negligible. On the basis of these findings, current recommendations to empirically treat all children with suspected bacterial meningitis with ceftriaxone in addition to vancomycin until the bacterial susceptibility results become available are justified also in Israel [40].

## VACCINATION

### INFLUENZA VACCINATION

Influenza vaccination of the community-dwelling elderly is widely recommended. Observational studies have shown a strong association between physicians' personal vaccination status and their reported level of recommendation to patients and possibly their patients' actual vaccination. No published trials have examined whether increasing vaccination rates of primary care staff raises vaccination among their patients. Proof of a positive effect would support the notion that vaccinating health care workers benefits their patients. However, Abramson et al. [1] found that increasing influenza vaccination of the medical staff did not substantially increase patient vaccination. These results do not show any patient benefit from staff vaccination in primary care. Dubnov and collaborators [11] characterized influenza vaccination coverage and its determinants among employees in an Arab hospital in Israel. The overall rate of questionnaire return was 66%; 256 employees participated in the study. The immunization coverage rate was 16.4%, similar to that reported for other hospitals in Israel. Logistic regression analysis demonstrated that influenza vaccination coverage was significantly and solely associated with the presence of chronic illness and influenza vaccination.

### SWINE FLU

Shlomai et al. [36] investigated predictors for pandemic (H1N1) 2009 virus infection among hospitalized patients with a flu-like illness and identified parameters suggesting a severe clinical course. The authors found that pandemic (H1N1) 2009 virus-positive hospitalized patients tend to be younger and have fewer comorbidities as compared to compatible negative patients. A significant number of relatively young and previously healthy positive patients might develop severe disease associated with a robust inflammatory reaction and significant lymphopenia.

## AUTOIMMUNITY

### HYPERTRIGLYCERIDEMIA

Anti-lipoprotein lipase antibodies have been described in rare cases of patients with hypertriglyceridemia. However, no systematic study evaluating these antibodies in patients with this lipid abnormality has been undertaken. de Carvalho and team [10]

analyzed the correlation of anti-lipoprotein lipase antibodies with other laboratory findings in patients with hypertriglyceridemia but no autoimmune disease. Their findings demonstrated a correlation between the immune response and dyslipoproteinemia in hypertriglyceridemic patients, suggesting that autoimmune disease contributes to the dyslipidemia process.

**CELIAC DISEASE**

In their study Israeli et al. [16] determined the celiac disease prevalence (including silent and potential disease) in adults. The prevalence of overt celiac disease diagnosed prior to recruitment was 0.12% (0.1% in men and 0.14% in women). The overall prevalence based on positive serology was 1.1%. Six of nine subjects with positive serology agreed to undergo endoscopy and intestinal biopsies. In all cases, biopsies were compatible with celiac disease (five biopsies were graded as Marsh 3a and one as Marsh 3b). One subject previously reporting irritable bowel-like symptoms was diagnosed with overt atypical celiac disease. The prevalence of overt celiac disease diagnosed by screening was 0.12%. The ratio of overt to silent celiac disease was 1:8. No cases of potential celiac disease were encountered.

**CONCLUSIONS**

After 12 years of publication, IMAJ continues to represent the manifold facets of the medical and scientific community in Israel. The Journal devotes significant space to all fields of medical research in Israel, and displays it to the world. This article highlights some of the medical problems indigenous to Israel as well as those found around the world. In the field of infectious diseases, brucellosis and leishmaniasis are representative of endemic diseases, while Clostridia, MRSA, papilloma and rotaviruses are omnipresent. In the field of vaccines, IMAJ publishes many research papers every year, emphasizing the influenza vaccine, new and old, and its effect on health care workers and the population at large. Infectious diseases and vaccines are involved with autoimmunity, and the Journal sets a special stage for research dealing with this aspect. Scientists and physicians in Israel should take advantage of the opportunity to publish research results in IMAJ, thereby promoting the valuable contribution of the country and the Journal to the world scientific community.

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