

Preparation of new polycyclic compounds derived from benzofurans and furochromones. An approach to novel 1,2,3-thia-, and seleno-diazolofurochromones of anticipated antitumor activities

Atta, SMS (Atta, Sanaa M. Sh.)^[2]; Farrag, DS (Farrag, Dalia S.)^[2]; Sweed, AMK (Sweed, Ayman M. K.)^[2]; Abdel-Rahman, AH (Abdel-Rahman, A. H.)^[1]

Abstract

Base catalyzed condensation of enamino ketones (3a,b) with malononitrile yields the respective 7-imino-5[2(substituted)prop-1-enyl]furochromene-6-carbonitriles (4a-d) according to the nature of base used. Compounds (3a, b) condense also with indan-1,3-diketone (5) to give alpha, beta-unsaturated carbonyl compounds (6a) and (6b), respectively. Pyrrolidine-catalyzed condensation of visnaginone (2a) and khellinone (2b) with active methylenes yields the corresponding 1-[7,7-(substituted) furobenzodihydropyrone derivatives (7a-e) which condense with semicarbazide to give the respective semicarbazones (8a-e). Compounds (8b,e) react with thionyl chloride to give the respective 1,2,3-thiadiazoles (9a,b) meanwhile compounds (8a-e) react also with selenium dioxide to give 1,2,3-selenadiazoles (9c-g), respectively. Chalcones (11a,b) were obtained upon condensing (2a,b) with ferrocene-2-carboxaldehyde (10). Compatible elementary and spectroscopic measurements were in good accord with the structures postulated for the new compounds. The antitumor activities of certain selected new compounds were screened, in vitro, against a panel of four (breast: MCF-7, cervix: HELA, colon: HCT116 and liver: HEPG2) human solid tumor cell lines and the structure activity relationship (SAR) was discussed. (C) 2010 Elsevier Masson SAS. All rights reserved.

Accession Number: WOS:000283911300027

Source: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY Volume: 45 Issue: 11 Pages: 4920-4927 DOI: 10.1016/j.ejmech.2010.07.065 Published: NOV 2010

Author Keywords: Benzofurans; Furochromenes; 1,2,3-Thiadiazoles; 1,2,3-Selenadiazoles; Antitumor activity

KeyWords Plus: ETHYL-ESTER DERIVATIVES; POTENT ANTITUMOR; ANTIBACTERIAL; HETEROCYCLES; VISNAGIN; AGENTS

Reprint Address: Atta, SMS (reprint author), Natl Res Ctr, Dept Chem Nat & Microbial Prod, El Behoos St, Cairo 12622, Egypt.

Addresses:

[1] Mansoura Univ, Fac Sci, Dept Chem, Mansoura, Egypt

[2] Natl Res Ctr, Dept Chem Nat & Microbial Prod, Cairo 12622, Egypt

E-mail Address: sanaa_atta2@yahoo.com

Publisher: ELSEVIER FRANCE-EDITIONS SCIENTIFIQUES MEDICALES
ELSEVIER, 23 RUE LINOIS, 75724 PARIS, FRANCE

References

1-A. Mustafa

Fuopyrans and Fuopyrones

John Wiley and Sons, N.Y. (1967) pp. 102–159 (Chapter III)

2-X.L. Hou, Z. Yang, H.N.C. Wong

Furans and Benzofurans

,in: G.W. Gribble, T.L. Gilchrist (Eds.), Progress in Heterocyclic Chemistry, vol. 14 Pergamon, Oxford, U.K. (2

3- S. Kim, A.A. Salim, S.M. Swanson, A.D. Kinghorn

Anticancer Agents Med. Chem., 6 (2006), p. 319

4-J. Hudson, G.H.N. Towers

Drugs Future, 24 (1999), p. 295

5 - S.A. Galal, A.S. Abd EL-All, M.M. Abdallah, H.I. EL-Diwani

Bioorg. Med. Chem. Lett., 19 (2009), pp. 2420–2428

6- R. Whomsley, E. Fernandez, P.J. Nicholls, H.J. Smith, P. Lombardi, V.J. Pestellini

J. Steroid Biochem. Mol. Biol., 44 (1993), p. 675

7-D. L. Romero, R. C. Thomas, P. D. May, T. Poel, US Appl. 354,925, 1994; C.A. 125, 1996, 142777.

8- I. Hayakawa, R. Shioya, T. Agatsuma, H. Furukawa, S. Naruto, Y. Sugano

Bioorg. Med. Chem. Lett., 14 (2004), p. 455

9-I. Hayakawa, R. Shioya, T. Agatsuma, Y. Sugano

Chem. Pharm. Bull., 53 (2005), p. 638

10-P.F. Wiley

J. Am. Chem. Soc., 74 (1952), p. 4329

E. Spath, W. Gruber

Ber. Dtsch. Chem. Ges., 71 (1938), p. 106

E. Spath, W. Gruber

Ber. Dtsch. Chem. Ges., 74 (1941), p. 1492

11-R.B. Gammill. [The Upjohn Company (Kalamazoo, MI)], USP, 4,284,569; C.A, 95, 1981, 203917.

12-R. Gleiter, V. Schehlmann

Angew. Chem., 102 (1990), p. 1450

- 13-M. Kandeel, S. EL-Meligie, R. Omer, S. Roshdy, K. Youssef
- 14- J. Pharm. Sci., 3 (1994), p. 197
- I. Lalezari, A. Shafiee, S. Yazdany
- J. Pharm. Sci., 63 (1974), p. 628
- 15- S. EL-Bahaie, M.G. Assy, M.M. Hassanien
- J. Indian Chem. Soc., 67 (1990), p. 757
- 16- I. Lalezari, A. Shafiee, J. Khorrami, A. Soltani
- J. Pharm. Sci., 67 (1978), p. 1336
- 17-,in: A.R. Katrizky, C.W. Rees (Eds.), Comrehensive Hetrocyclic Chemistry, vol. 4Pergamon Press, Oxford, U.K (1984) (Chapters 1–4 and vol. 5 Chapters 1–3)
- 18- B.A. Baht, K.L. Dhar, S.C. Puri, A.K.I. Saxena, M. Shanmugavel, G.N. Qazi
- Bioorg. Med. Chem. Lett., 15 (2005), p. 3177
- 19- T. Chen, Y.S. Wong, W. Zheng, J. Liu
- Chemico-Biological Interaction, 180 (2009), p. 54
- 20 -K. EL-Bayoumy, R. Sinha
- Mutat. Res., 551 (1–2) (2004), p. 181
- 21 -M.M. Sidky, M.R. Mahran, I.T. Hennawy
- J. Prakt. Chem., 312 (1970), p. 228
- 22- A. Mustafa, M.M. Sidky, M.R. Mahran
- Liebigs Ann. Chem., 704 (1967), p. 182
- 23- Y.J. Surth
- Nat. Rev. Cancer, 3 (2003), pp. 768–780
- 24-E.I. El-Dosoky, M.A. Hammad, N. Grant, E.M. El-Telbani, A.H. Abdel Rahm
- Tetrahedron, 53 (1997), pp. 15799–15806

Synthesis and reactions of some new quinoline thiosemicarbazide derivatives of potential biological activity

Keshk, EM (Keshk, E. M.)^[1]; El-Desoky, SI (El-Desoky, S. I.)^[1]; Hammouda, MAA (Hammouda, M. A. A.)^[1]; Abdel-Rahman, AH (Abdel-Rahman, A. H.)^[1]; Hegazi, AG (Hegazi, A. G.)^[2]

Abstract

Quinoline-2-carbohydrazide (3) was reacted with aryl or alkyl isothiocyanates to give the corresponding quinoline thiosemicarbazides (4a-e). Cyclization of the substituted thiosemicarbazides with sodium hydroxide led to the formation of 5-(quinolin-2-yl)-2H-1, 2, 4-triazole-3(4H)-thiones (5a-e). Desulfurization of thiosemicarbazides by mercuric oxide gave 5-(quinolin-2-yl)-1, 3, 4-oxadiazol-2-amines (6a-e). Treatment of thiosemicarbazides with ethyl bromoacetate or -bromopropionic acid yielded (Z)-N'-(3-substituted thiazolidin-4-oxo-2-ylidene) quinoline-2-carbohydrazides (7a-d), (8a-d), respectively. Treatment of thiosemicarbazides with chloroacetone furnished (Z)-N'-(4-methyl-3-substituted-thiazol-2(3H)-ylidene) quinoline-2-carbohydrazides (9a-d). Furthermore, the reaction of thiosemicarbazides with phosphorus oxychloride gave N-substituted-5-(quinolin-2-yl)-1,3,4-thiadiazol-2-amines (10a-e). All newly synthesized compounds were tested and evaluated for antimicrobial activity.

Source: PHOSPHORUS SULFUR AND SILICON AND THE RELATED ELEMENTS Volume: 183 Issue: 6 Pages: 1323-1343 DOI: 10.1080/10426500701641304 Published: 2008

Author Keywords: antimicrobial activity; oxadiazole; quinaldic acid; thiazole; thiadiazole; thiosemicarbazide; triazole

KeyWords Plus: HIV PROTEASE INHIBITORS; ACID; 4-THIAZOLIDINONES; 1,3,4-OXADIAZOLES; ANALOGS; AGENTS

Reprint Address: Keshk, EM (reprint author), Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt.

Addresses:

[1] Mansoura Univ, Fac Sci, Dept Chem, Mansoura 35516, Egypt

[2] Natl Res Ctr, Dept Microbiol, Cairo, Egypt

References:

1. Title: Synthesis and evaluation of some new spiro indoline-based heterocycles as potentially active antimicrobial agents

Author(s): Abdel-Rahman, AH; Keshk, EM; Hanna, MA; et al.

Source: BIOORGANIC & MEDICINAL CHEMISTRY Volume: 12 Issue: 9 Pages: 2483-2488 DOI: 10.1016/j.bmc.2003.10.063 Published: MAY 1 2004

2. Title: New water-soluble duocarmycin derivatives: Synthesis and antitumor activity

of A-ring pyrrole compounds bearing beta-heteroarylacryloyl groups

Author(s): Amishiro, N; Nagamura, S; Kobayashi, E; et al.

Source: JOURNAL OF MEDICINAL CHEMISTRY Volume: 42 Issue: 4 Pages: 669-676
DOI: 10.1021/jm980559y Published: FEB 25 1999

3. Title: Potent HIV protease inhibitors containing a novel (hydroxyethyl)amide isostere

Author(s): Beaulieu, PL; Wernic, D; Abraham, A; et al.

Source: JOURNAL OF MEDICINAL CHEMISTRY Volume: 40 Issue: 14 Pages: 2164-2176
DOI: 10.1021/jm9606608 Published: JUL 4 1997

4. Title: Synthesis of key sandramycin analogs: systematic examination of the intercalation chromophore

Author(s): Boger, DL; Chen, JH; Saionz, KW; et al.

Source: BIOORGANIC & MEDICINAL CHEMISTRY Volume: 6 Issue: 1 Pages: 85-102
DOI: 10.1016/S0968-0896(97)10014-1 Published: JAN 1998

5. Title: NEW ACYLTHIOSEMICARBAZIDES, THIAZOLIDINONES, AND 1,3,4-OXADIAZOLES AS POSSIBLE ANTICONVULSANTS

Author(s): CESUR, N; CESUR, Z; GURSOY, A

Source: ARCHIV DER PHARMAZIE Volume: 325 Issue: 9 Pages: 623-624 DOI:
10.1002/ardp.19923250920 Published: SEP 1992

6. Title: [not available]

Author(s): Cruickshank, R.; Dugnid, J.J.; Masion, B.P.; et al; Swain, R.H.

Source: Medical Microbiology Published: 1979

Publisher: Churchill Livingstone, Edinburgh-London-New York

7. Title: STUDIES WITH QUINOLINES .1. SYNTHESIS OF QUINALDIC ACID AND SOME OF ITS AMIDE DERIVATIVES

Author(s): DAVIS, JW

Source: JOURNAL OF ORGANIC CHEMISTRY Volume: 24 Issue: 11 Pages: 1691-1694
DOI: 10.1021/jo01093a016 Published: 1959

8. Title: BIOSYNTHESIS OF QUINOXALINE ANTIBIOTICS - PURIFICATION AND CHARACTERIZATION OF THE QUINOXALINE-2-CARBOXYLIC ACID ACTIVATING ENZYME

FROM STREPTOMYCES-TRIOSTINICUS

Author(s): GLUND, K; SCHLUMBOHM, W; BAPAT, M; et al.

Source: BIOCHEMISTRY Volume: 29 Issue: 14 Pages: 3522-3527 DOI: 10.1021/bi00466a015 Published: APR 10 1990

9. Title: Phthalazine PDE IV inhibitors: Conformational study of some 6-methoxy-1,4-disubstituted derivatives

Author(s): Haack, T; Fattori, R; Napoletano, M; et al.

Source: BIOORGANIC & MEDICINAL CHEMISTRY Volume: 13 Issue: 14 Pages: 4425-4433 DOI: 10.1016/j.bmc.2005.04.057 Published: JUL 15 2005

10. Title: Synthesis of 2,5-disubstituted-1,4-benzoquinone derivatives as potential antimicrobial and cytotoxic agents

Author(s): Hassan, MA; Maslat, AO; Abussaud, M; et al.

Source: ARCHIV DER PHARMAZIE Volume: 331 Issue: 12 Pages: 385-388 DOI: 10.1002/(SICI)1521-4184(199812)331:12<385::AID-ARDP385>3.3.CO;2-2 Published: DEC 1998

11. Title: Benzofuranyi-pyran-2-ones, -pyridazines, and -pyridones from naturally occurring furochromones (Visnagin and Khellin)

Author(s): Keshk, EM

Source: HETEROATOM CHEMISTRY Volume: 15 Issue: 1 Pages: 85-91 DOI: 10.1002/hc.10219 Published: 2004

12. Title: Synthesis of Mannich bases of some 2,5-disubstituted 4-thiazolidinones and evaluation of their antimicrobial activities

Author(s): Kocabalkanli, A; Ates, O; Otuk, G

Source: ARCHIV DER PHARMAZIE Volume: 334 Issue: 2 Pages: 35-39 DOI: 10.1002/1521-4184(200102)334:2<35::AID-ARDP35>3.0.CO;2-4 Published: FEB 2001

13. Title: Synthesis of some 3-(arylalkylthio)-4-alkyl/aryl-5-(4-aminophenyl)-4H-1,2,4-triazole derivatives and their anticonvulsant activity (View record in MEDLINE)

Author(s): Kucukguzel, Ilkay; Kucukguzel, S. Guniz; Rollas, Sevim; et al.

Source: Farmaco (Lausanne) Volume: 59 Issue: 11 Pages: 893-901 DOI: 10.1016/j.farmac.2004.07.005 Published: November 2004

14. Title: Synthesis, characterisation and biological activity of novel 4-thiazolidinones, 1,3,4-oxadiazoles and some related compounds

Author(s): Kucukguzel, SG; Oruc, EE; Rollas, S; et al.

Source: EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY Volume: 37 Issue: 3 Pages: 197-206 Article Number: PII S0223-5234(01)01326-5 DOI: 10.1016/S0223-5234(01)01326-5 Published: MAR 2002

15. Title: DOUBLE INHIBITION OF D-GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE AND LACTATE-DEHYDROGENASE (View record in MEDLINE)

Author(s): LIEN, LV; ECSEDI, G; KELETI, T

Source: ACTA BIOCHIMICA ET BIOPHYSICA HUNGARICA Volume: 14 Issue: 1-2 Pages: 11-17 Published: 1979

16. Title: Antimycobacterial activity of new 3-substituted 5-(pyridin-4-yl)-3H-1,3,4-oxadiazol-2-one and 2-thione derivatives. Preliminary molecular modeling investigations

Author(s): Mamolo, MG; Zampieri, D; Vio, L; et al.

Source: BIOORGANIC & MEDICINAL CHEMISTRY Volume: 13 Issue: 11 Pages: 3797-3809 DOI: 10.1016/j.bmc.2005.03.013 Published: JUN 1 2005

17. Title: beta-methanesulfonyl-L-valine as a novel, unnatural amino acid surrogate for P-2 in the design of HIV protease inhibitors.

Author(s): Park, C; Choi, H; Son, YC; et al.

Source: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS Volume: 6 Issue: 6 Pages: 585-588 DOI: 10.1016/0960-894X(96)00086-8 Published: MAR 19 1996

18. Title: Synthesis and antimicrobial activity of some 1,4-disubstituted thiosemicarbazide and 2,5-disubstituted 1,3,4-thiadiazole derivatives

Author(s): Rollas, S; Karakus, S; Durgun, BB; et al.

Source: FARMACO Volume: 51 Issue: 12 Pages: 811-814 Published: DEC 1996

19. Title: 2003020370 Patent Number: WO 2003020370

Inventor/Assignee: SCHOSTAREZ HJ

20. Title: Poststatin, a new inhibitor of prolyl endopeptidase .7. N-cycloalkylamide analogues

Author(s): Tsuda, M; Muraoka, Y; Nagai, M; et al.

Source: JOURNAL OF ANTIBIOTICS Volume: 49 Issue: 9 Pages: 909-920 Published: SEP 1996

21. Title: Phosphinic pseudo-tripeptides as potent inhibitors of matrix metalloproteinases: A structure-activity study

Author(s): Vassiliou, S; Mucha, A; Cuniasse, P; et al.

Source: JOURNAL OF MEDICINAL CHEMISTRY Volume: 42 Issue: 14 Pages: 2610-2620
DOI: 10.1021/jm9900164 Published: JUL 15 1999

22. Title: [not available]Author(s): VIPIN K

Source: EUR J PHARM SCI Volume: 24 Pages: 213 Published: 2005

23. Title: [not available]Author(s): XIAOQING S

Source: POLYHEDRON Volume: 23 Pages: 1851 Published: 2004

24. Title: 4-phenylthiazole derivatives inhibit IL-6 secretion in osteoblastic cells and suppress bone weight loss in ovariectomized mice

Author(s): Yamaguchi, K; Yada, M; Tsuji, T; et al.

Source: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS Volume: 9 Issue: 7 Pages: 957-960
DOI: 10.1016/S0960-894X(99)00122-5 Published: APR 5 1999

Synthesis and evaluation of some new spiro indoline-based

heterocycles as potentially active antimicrobial agents

Abdel-Rahman, AH (Abdel-Rahman, AH); Keshk, EM (Keshk, EM); Hanna, MA (Hanna, MA); El-Bady, SM (El-Bady, SM)

Abstract

Several new spiro indoline-based heterocycles were synthesized by prior preparation of the 4-(2'-oxo-indol-3'-ylidene)oxazol-5-one derivatives and subsequent reaction of the produced indol-3-ylidene based heterocycles with activated nitrile reagents. The obtained products were allowed to react with hydrazine hydrate in alcoholic basic to give the target compounds. Structure of these products was confirmed on the bases of elemental as well as spectral data. Representative compounds of the hitherto synthesized products were tested and evaluated as antimicrobial agents. (C) 2004 Elsevier Ltd. All rights reserved.

Source: BIOORGANIC & MEDICINAL CHEMISTRY Volume: 12 Issue: 9 Pages: 2483-2488 DOI: 10.1016/j.bmc.2003.10.063 Published: MAY 1 2004

Author Keywords: spiro indoline-based heterocycles; synthesis; antimicrobial evaluations

KeyWords Plus: AZOLOPYRIMIDINES; NITRILES

Reprint Address: Abdel-Rahman, AH (reprint author), Univ Mansoura, Fac Sci, Dept Chem, Mansoura, Egypt.

Addresses:

[1] Univ Mansoura, Fac Sci, Dept Chem, Mansoura, Egypt

[2] Mansoura Univ, Fac Sci, Dept Chem, Dumyat, Egypt

E-mail Address: mahanna69@hotmail.com

Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, ENGLAND

Web of Science Categories: Biochemistry & Molecular Biology; Chemistry, Medicinal; Chemistry, Organic

Research Areas: Biochemistry & Molecular Biology; Pharmacology & Pharmacy; Chemistry

Synthesis and reactions of some new substituted 6-imidazolyl-4-oxo-4H-1-benzopyran-3-

carboxaldehyde and use of DNA in evaluation of their biological activity.

Author(s): Abdel-Rahman, A H; Khalil, A M; Keshk, E M

Abstract

Vilsmeier-Haack reaction of imidazolyl acetophenone I gave 6-imidazolyl-4-oxo-4H-1-benzopyran-3-carboxaldehyde II. The compound II was reacted with primary amines (1:1 molar ratio) to form the corresponding n-aril (meteroaryl) imino derivatives IIIa-f. Treatment of aldehyde II with excess amines (1:2 molar ratio) gave the corresponding 2-arylamino-3-arylaminomethylenebenzopyran derivatives IVa-c. The n-aril (meteroaryl) imino derivatives IIIb,d,e,f were reacted with thioglycolic acid to give benzopyranothiazepinone derivatives VIa-d. When the aldehyde II was treated with secondary amines gave the corresponding trans-enaminoketones VIIIa-c. Trans-enaminoketones VIIIa-c were reacted with hydrazines and/or hydroxylamine hydrochloride to give pyrazolyl and/or isoxazolyl benzene IXa-c and X, respectively. The reaction of aldehyde II with hydrazines on cold gave the corresponding hydrazones XIIIa-d. However, the reaction of aldehyde II with hydrazines on refluxing gave the corresponding pyrazole derivatives 5 XIVa,b and XVa,b.. The structural formula of the new compounds were established by using different instrumental analyses. Some compounds in this study were biologically evaluated for their ability to bind to DNA.

Source: Bollettino chimico farmaceutico Volume: 140 Issue: 6 Pages: 387-96 Published: 2001 Nov-Dec

Address: Department of Chemistry, Faculty of Science, Mansoura University, Mansoura, Egypt

MeSH Terms:

Heading	Qualifier
Benzopyrans	pharmacology
Chemistry, Physical	
Chromones	*chemical synthesis
	*pharmacology
Colorimetry	
DNA	*drug effects
	metabolism
Imidazoles	*chemical synthesis
	*pharmacology
Magnetic Resonance Spectroscopy	
Methyl Green	
Physicochemical Phenomena	
Rosaniline Dyes	
Structure-Activity Relationship	

Citation Subset: Index Medicus

Chemical:

Registry Number	Substance
0	Benzopyrans
0	Chromones
0	Imidazoles
0	Rosaniline Dyes
82-94-0	Methyl Green
9007-49-2	DNA

Research Areas: Chemistry; Pharmacology & Pharmacy; Genetics & Heredity; Biochemistry & Molecular Biology (provided by Thomson Reuters)

The epidemiology of schistosomiasis in Egypt: Gharbia Governorate

El-Hawey, AM (El-Hawey, AM); Amr, MM (Amr, MM); Abdel-Rahman, AH (Abdel-Rahman, AH); El-Ibiary, SA (El-Ibiary, SA); Agina, AM (Agina, AM); Abdel-Hafez, MA (Abdel-Hafez,

MA); Waheeb, AA (Waheeb, AA); Hussein, MH (Hussein, MH); Strickland, GT (Strickland, GT)

Abstract

Health questionnaires and parasitologic examinations of urine and stool were performed upon a stratified random sample of 14,344 individuals from 1,952 households in 34 rural communities in Gharbia Governorate of Egypt to investigate the prevalence of, risk factors for, and changing pattern of infection with *Schistosoma* sp. A subset, every fifth household, of 1,973 subjects had physical and ultrasound examinations to investigate prevalence of and risk factors for morbidity. Community prevalence of *Schistosoma mansoni* ranged from 17.9% to 79.5% and averaged 37.7%. The geometric mean egg count (GMEC) was 78.9 eggs/gram of feces. The prevalence and intensity of infection was 40-50% and 70-100 eggs/gram of feces in those greater than or equal to 10 years of age. *Schistosoma haematobium* was detected in 5 of the 34 communities. The maximum infection rate was 2.8% and mean GMEC in the five communities was 2.1/10 ml of urine. The overall prevalence of *S. haematobium* in the governorate was 0.3%. Risk factors for infection with *S. mansoni* were male gender, an age >10 years, living in smaller communities, exposures to canal water, prior therapy for schistosomiasis, or blood in the stool (in children only). Morbidity detected by physical examination or ultrasonography did not correlate with *S. mansoni* infection in individuals with the exception of periportal fibrosis (PPF, odds ratio [OR] = 1.25). Periportal fibrosis was detected in more than half of the subjects by ultrasonography; 5.3% had grade II lesions and 1.0% had the most severe grade III changes. Risk factors for morbidity as manifested by ultrasonographically detected PPF were similar to those for infection. Periportal fibrosis had a negative relationship with abdominal pain (OR = 0.45) and hepatomegaly detected by physical examination and ultrasonography (ORs = 0.72 and 0.68), but it was associated with splenomegaly (ORs = 4.14 and 3.55). The prevalence of PPF, hepatomegaly, and splenomegaly increased with age. There was no relationship between community burden of schistosomiasis *mansoni* and any measurements of morbidity with the exception of splenomegaly detected by physical examination ($r = 0.40$). *Schistosoma mansoni* has almost completely replaced *S. haematobium* in Gharbia, which has a high prevalence and moderate intensity of *S. mansoni* infection. Periportal fibrosis was detected by ultrasonography in more than half of the subjects, and 1 in 16 had grade II and III lesions. The only relationship between PPF and other morbidity findings was its positive relationship with splenomegaly and negative association with hepatomegaly. Hepatic morbidity is common in communities in Gharbia but the role of schistosomiasis *mansoni* in this is uncertain.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2 Supplement: S Pages: 42-48 Published: FEB 2000

KeyWords Plus: DELTA

Reprint Address: El-Hawey, AM (reprint author), Al Azhar Univ, Fac Med, Dept Trop Med, Cairo, Egypt.

Addresses:

[1] Al Azhar Univ, Fac Med, Dept Trop Med, Cairo, Egypt

[2] Cairo Univ, Fac Med, Dept Community Med, Cairo, Egypt

[3] Univ Maryland, Sch Med, Int Hlth Program, Baltimore, MD 21201 USA

[4] Univ Maryland, Sch Med, Dept Epidemiol & Prevent Med, Baltimore, MD 21201 USA

Publisher: AMER SOC TROP MED & HYGIENE, 8000 WESTPARK DRIVE SUITE 130, MCLEAN, VA 22101 USA

Web of Science Categories: Public, Environmental & Occupational Health; Tropical Medicine

Research Areas: Public, Environmental & Occupational Health; Tropical Medicine

REFERENCES:

1. Title: ULTRASONOGRAPHIC PREDICTION OF ESOPHAGEAL-VARICES IN SCHISTOSOMIASIS-MANSONI

Author(s): ABDELWAHAB, MF; ESMAT, G; FARRAG, A; et al.

Source: AMERICAN JOURNAL OF GASTROENTEROLOGY Volume: 88 Issue: 4 Pages: 560-563 Published: APR 1993

2. Title: HIGH SEROPREVALENCE OF HEPATITIS-C INFECTION AMONG RISK GROUPS IN EGYPT

Author(s): ABDELWAHAB, MF; ZAKARIA, S; KAMEL, M; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 51 Issue: 5 Pages: 563-567 Published: NOV 1994

3. Title: SCHISTOSOMIASIS MANSONI IN AN EGYPTIAN VILLAGE IN THE NILE DELTA (View record in MEDLINE)

Author(s): ABDELWAHAB, MF; STRICKLAND, GT; ELSAHLI, A; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 29 Issue: 5 Pages: 868-874 Published: 1980

4. Title: The epidemiology of schistosomiasis in Egypt: Methods, training, and quality control of clinical and ultrasound examinations

Author(s): Abdel-Wahab, MF; Esmat, G; El-Boraey, Y; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2 Supplement: S Pages: 17-20 Published: FEB 2000

5. Title: CHANGING PATTERN OF SCHISTOSOMIASIS IN EGYPT 1935-79 (View record in MEDLINE)

Author(s): ABDELWAHAB, MF; STRICKLAND, GT; ELSAHLI, A; et al.

Source: LANCET Volume: 2 Issue: 8136 Pages: 242-244 Published: 1979

6. Title: [not available]

Author(s): ARTHUR RR

Source: T R SOC TROP MED HYG Volume: 91 Pages: 121 Published: 1997

7. Title: 1983 NILE DELTA SCHISTOSOMIASIS SURVEY - 48 YEARS AFTER SCOTT

Author(s): CLINE, BL; RICHARDS, FO; ELALAMY, MA; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 41 Issue: 1
Pages: 56-62 Published: JUL 1989

8. Title: Quality control for parasitologic data

Author(s): Cline, BL; Habib, M; Gamil, F; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2
Supplement: S Pages: 14-16 Published: FEB 2000

9. Title: Prevalence and morbidity of schistosomiasis among rural fishermen at two
Egyptian villages (Gharbia Governorate) (View record in MEDLINE)

Author(s): El-Hawey, A. M.; Abdel-Rahman, A. H.; Agina, A. A.; et al.

Source: Journal of the Egyptian Society of Parasitology Volume: 25 Issue: 3 Pages: 649-
657 Published: 1995

10. Title: Epidemiology 1, 2, 3: Study and sample design

Author(s): Hussein, MH; El-Sayed, MK; Talaat, M; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2
Supplement: S Pages: 8-13 Published: FEB 2000

11. Title: Ultrasound-detected hepatic periportal thickening in patients with prolonged
pyrexia

Author(s): Medhat, A; Nafeh, M; Swifee, Y; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 59 Issue: 1
Pages: 45-48 Published: JUL 1998

12. Title: RECENT TRENDS IN THE PREVALENCE AND DISTRIBUTION OF
SCHISTOSOMIASIS IN THE NILE DELTA REGION

Author(s): MICHELSON, MK; AZZIZ, FA; GAMIL, FM; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 49 Issue: 1
Pages: 76-87 Published: JUL 1993

13. Title: The incidence and distribution of the human schistosomes in Egypt

Author(s): Scott, JA

Source: AMERICAN JOURNAL OF HYGIENE Volume: 25 Issue: 3 Pages: 566-614
Published: MAY 1937

14. Title: Vector snail control in Qalyub, Egypt. (View record in MEDLINE)

Author(s): VAN DER SCHALIE, H

Source: Bulletin of the World Health Organization Volume: 19 Issue: 2 Pages: 263-83
Published: 1958

15. Title: [not available]

Author(s): WEIR JM

Source: J EGYPT PUBLIC HLTH Volume: 27 Pages: 55 Published: 1952

1. Title: ULTRASONOGRAPHIC PREDICTION OF ESOPHAGEAL-VARICES IN
SCHISTOSOMIASIS-MANSONI

Author(s): ABDELWAHAB, MF; ESMAT, G; FARRAG, A; et al.

Source: AMERICAN JOURNAL OF GASTROENTEROLOGY Volume: 88 Issue: 4 Pages: 560-
563 Published: APR 1993

2. Title: HIGH SEROPREVALENCE OF HEPATITIS-C INFECTION AMONG RISK GROUPS IN
EGYPT

Author(s): ABDELWAHAB, MF; ZAKARIA, S; KAMEL, M; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 51 Issue: 5
Pages: 563-567 Published: NOV 1994

3. Title: SCHISTOSOMIASIS MANSONI IN AN EGYPTIAN VILLAGE IN THE NILE DELTA (View
record in MEDLINE)

Author(s): ABDELWAHAB, MF; STRICKLAND, GT; ELSAHLI, A; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 29 Issue: 5
Pages: 868-874 Published: 1980

4. Title: The epidemiology of schistosomiasis in Egypt: Methods, training, and quality
control of clinical and ultrasound examinations

Author(s): Abdel-Wahab, MF; Esmat, G; El-Boraey, Y; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2
Supplement: S Pages: 17-20 Published: FEB 2000

5. Title: CHANGING PATTERN OF SCHISTOSOMIASIS IN EGYPT 1935-79 (View record in
MEDLINE)

Author(s): ABDELWAHAB, MF; STRICKLAND, GT; ELSAHLY, A; et al.

Source: LANCET Volume: 2 Issue: 8136 Pages: 242-244 Published: 1979

6. Title: [not available]

Author(s): ARTHUR RR

Source: T R SOC TROP MED HYG Volume: 91 Pages: 121 Published: 1997

7. Title: 1983 NILE DELTA SCHISTOSOMIASIS SURVEY - 48 YEARS AFTER SCOTT

Author(s): CLINE, BL; RICHARDS, FO; ELALAMY, MA; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 41 Issue: 1
Pages: 56-62 Published: JUL 1989

8. Title: Quality control for parasitologic data

Author(s): Cline, BL; Habib, M; Gamil, F; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2
Supplement: S Pages: 14-16 Published: FEB 2000

9. Title: Prevalence and morbidity of schistosomiasis among rural fishermen at two
Egyptian villages (Gharbia Governorate) (View record in MEDLINE)

Author(s): El-Hawey, A. M.; Abdel-Rahman, A. H.; Agina, A. A.; et al.

Source: Journal of the Egyptian Society of Parasitology Volume: 25 Issue: 3 Pages: 649-
657 Published: 1995

10. Title: Epidemiology 1, 2, 3: Study and sample design

Author(s): Hussein, MH; El-Sayed, MK; Talaat, M; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 62 Issue: 2
Supplement: S Pages: 8-13 Published: FEB 2000

11. Title: Ultrasound-detected hepatic periportal thickening in patients with prolonged
pyrexia

Author(s): Medhat, A; Nafeh, M; Swifee, Y; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 59 Issue: 1
Pages: 45-48 Published: JUL 1998

12. Title: RECENT TRENDS IN THE PREVALENCE AND DISTRIBUTION OF
SCHISTOSOMIASIS IN THE NILE DELTA REGION

Author(s): MICHELSON, MK; AZZIZ, FA; GAMIL, FM; et al.

Source: AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE Volume: 49 Issue: 1

Pages: 76-87 Published: JUL 1993

13. Title: The incidence and distribution of the human schistosomes in Egypt

Author(s): Scott, JA

Source: AMERICAN JOURNAL OF HYGIENE Volume: 25 Issue: 3 Pages: 566-614
Published: MAY 1937

14. Title: Vector snail control in Qalyub, Egypt. (View record in MEDLINE)

Author(s): VAN DER SCHALIE, H

Source: Bulletin of the World Health Organization Volume: 19 Issue: 2 Pages: 263-83
Published: 1958

15. Title: [not available]

Author(s): WEIR JM

Source: J EGYPT PUBLIC HLTH Volume: 27 Pages: 55 Published: 1952